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British Birds

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Front-cover photograph: Male European Stonechat *Saxicola rubicola*, Hungary, May 2013.
Ian Butler

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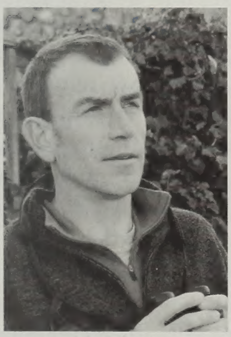

April this year marked the start, in Shetland at least, of fieldwork for the latest national survey of Britain & Ireland's seabirds, with Tystie (Black Guillemot if you prefer) counts completed along many stretches of coastline on early mornings when the weather was fine. The 15–20 years between seabird surveys is about the same as that between national surveys of Britain & Ireland's flora, which I was thinking about as I looked at the flier from the BSBI (Botanical Society of Britain and Ireland) included with this issue of *BB*. It struck me that the nation's birders could have a potentially large and very positive effect on BSBI's *Atlas 2020*, for which fieldwork has now begun (and will be completed in 2019) – especially during the summer months when our birding effort often dips a little. Many birders are competent botanists already, but most of the rest of us probably have enough knowledge to make a worthwhile contribution too. Just like patch-work birding, botanising can be rewarding anywhere in the country, so it's easier to get involved in this than Seabird 2015 (or whatever it will be called when the funding programme is eventually finalised). You can find out more about the BSBI from the aforementioned flier, or by visiting www.bsbi.org.uk A better understanding of our plant distributions is just as important for conservation as bird atlassing, so it's a thoroughly worthwhile project.

Roger Riddington

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British Birds aims to: ✣ provide an up-to-date magazine for everyone interested in the birds of the Western Palearctic; ✣ publish a range of material on behaviour, conservation, distribution, ecology, identification, movements, status and taxonomy as well as the latest ornithological news and book reviews; ✣ maintain its position as the journal of record; and ✣ interpret scientific research on birds in an easily accessible way.

Drones – and the need for a code of conduct

Remote detection and observation have long been the *modus operandi* of birdwatching and conservation monitoring, with technological assistance most commonly in the form of binoculars, telescopes and cameras. Technologies for observation are not necessarily all carried around, however, and a variety of aeroplane- and satellite-based platforms provide imagery with capacity to map habitats and understand the distribution and abundance of species. Numerous applied academic and conservation projects have used data from these technologies. For example, satellite images from the LANDSAT Multispectral Scanner were used in the 1980s to estimate Dunlin *Calidris alpina* abundance in the Flow Country in northern Scotland (Avery & Haines-Young 1990). Similarly, LANDSAT 7 Thematic Mapper image data have been used to map feeding habitats of migratory birds in the Asian–Australasian Flyway (Wade & Hickey 2008), with field data on sediment size and the benthic invertebrates that form the birds' food being combined with the satellite imagery to map the distribution of feeding areas and support conservation efforts.

Drones – also known as unmanned aerial systems (UASs), Unmanned Aerial Vehicles (UAVs), small unmanned aerial surveillance aircraft, or remotely piloted aircraft systems (RPAS) – now enter this arsenal of technologies. From TV programmes such as *Countryfile* and WhicheverSeasonItIs*watch* to the aspirations of several companies to use drones to deliver goods, it sometimes appears that drones are about to be everywhere.

Drones are now readily available for purchase, they are relatively cheap, easy to transport, relatively simple to operate and can easily be used as and when needed. Drones provide a platform for capturing high-resolution (in terms of photo quality) imagery and, since they fly close to the ground, they can record animals directly in the images, unlike most satellite-based systems. Their airborne vantage point also results in drones offering interesting photographic opportunities (see for example www.dronestagr.am).

Drones provide new possibilities for studying birds but also present a number of challenges, in terms of managing their real and potential impacts. Drones have quickly found application in bird-census and conservation work (Sarda-Palomera *et al.* 2012); they are particularly good for collecting data from areas where access is difficult and where human presence would threaten or disturb habitats or local fauna. In the USA, the US Geological Survey uses drones fitted with thermal cameras to count Sandhill Cranes *Grus canadensis* at their roosts. Images are taken at night, and individual cranes are revealed as cool spots on the imagery, the insulation provided by their feathers reducing their apparent temperature below that of the water in which they are roosting (see http://uas.usgs.gov/CO_SandhillCranes MonteVistaNWR.shtml).

In another, more complex, example of the use of multiple modern technologies for avian research, a GPS data logger was used to track the flight paths of Lesser Kestrels *Falco naumanni* in Spain. The coordinates and timing for flight paths were retrieved from the data logger and then used to programme a drone, which followed the recorded flight paths to show which habitats the birds spent time hunting over, as well as their routes across the landscape (Rodríguez *et al.* 2012).

The studies described above are all carried out under a variety of relevant regulations, notably legislation on the use and piloting of remote-controlled aircraft, and aviation safety, as well as legislation and directives for animal handling and experiments, and ethical codes for research on wild animals. Pilots for commercial and work-related uses of drones are required to be fully trained and licensed through programmes that include ground and flight-school training.

The availability of drones and their use for leisure purposes and recreational photography has the potential, however, for a darker side to drones in relation to birds and conservation. Although drones are relatively quiet in operation, the law requires them to be flown within 400 ft (122 m) of the ground. Birds are very aware of what is flying around and over them, and such low-level flights can cause disturbance. We don't yet know how different birds – and other wildlife – react to drones, although raptors may attack drones and some species – for example wildfowl – have already been observed to take flight when drones pass overhead. Scientific and commercial ('for remuneration') uses of drones are required to assess and manage these risk factors and conform to relevant legislation; other uses of drones are not controlled as rigorously, although the House of Lords has recently called for compulsory registration of all drones and for drone manufacturers to make purchasers aware of restrictions on their use (www.publications.parliament.uk/pa/ld201415/ldselect/ldeucom/122/122.pdf).

All uses (including work, such as the scientific studies described, and leisure uses) of drones fall under Civil Aviation Authority (CAA) regulations (www.caa.co.uk/default.aspx?catid=1995). These provide guidance on where and how UAVs may be flown, safety being a dominant consideration; there is a strong concern with protection of people and property. In addition, photographs taken from drones which include people are subject to the regulations of the Data Protection Act. Unfortunately, however, there appears to be no specific guidance for use of drones in relation to wildlife, in landscapes away from congested urban areas or open-air assemblies of people, and over areas of high conservation value. It might be hoped that commonsense would prevail, but it is perhaps worth identifying a number of principles that might form a code of conduct for use of drones in relation to wildlife and conservation.

A code of conduct for bird photography was published in *BB* in April 2011 (www.britishbirds.co.uk/article/bird-photography-a-new-code-of-practice) and in many ways we might usefully build on that code for drones. A code of conduct should recognise the legislation and regulations that apply to drone use; and it should combine the legal, safe and disturbance-free use of drones with awareness of possible disturbance to birds and their environment caused by the drone as it is flown.

With this in mind, I offer the following draft for a code of conduct:

i) All relevant legislation regarding the safe and proper operation and use of drones must be followed (see the CAA website).
ii) Always ensure you have the landowner's permission before flying a drone.
iii) The welfare of wildlife, and the value of the habitats in which that wildlife is found, is more important than the drone and its use.
iv) Birds and other wildlife should not be harassed or disturbed by drone flights.
v) Drones should not be flown over nesting areas, colonies, roosts and important feeding areas.
vi) If use of a drone is likely to inhibit normal bird or animal behaviour, then the flight should not be made.
vii) Bird and wildlife photography with a drone must be subject to the same legislation and codes as other forms of bird and wildlife photography (for example, that relating to Schedule 1 breeding species through the Wildlife and Countryside Act).

Finally, it is worth noting that the risk of disturbance is not one-way. For example, video footage, captured by the drone itself, shows a Red-tailed Hawk *Buteo jamaicensis* attacking a drone and knocking it from the sky in Massachusetts (www.youtube.com/watch?v=AhDG_WBIQgc). Birds themselves seem to have their own code of conduct towards flying objects!

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Richard Aspinall

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Bid to ban spring hunting in Malta is defeated

In a bitter blow to the brave campaign by BirdLife Malta to outlaw spring hunting in Malta, the referendum held on 11th April was won by the pro-hunting lobby by the slenderest of margins: 50.4% of the vote.

So the spring hunting of Common Quails *Coturnix coturnix* and Turtle Doves *Streptopelia turtur* – and the illegal killing of other protected species during the spring season – will continue unabated in Malta, despite it being banned in the rest of the European Union. The season started on 14th April, straight after the vote.

The historic referendum was decided on a wafer-thin margin, with just 2,220 pro-hunting votes tipping the balance out of a total 250,648 votes cast. Polls before the vote had given the conservation lobby a six-point lead.

Joseph Muscat, Malta's prime minister, said the public had given hunters a last chance. 'But the hunters have to understand that the story has totally changed for them. Practically half the people do not want spring hunting to continue. They have to understand that they must respect the law in the spring hunting season,' he said.

In its first response, BirdLife Malta said on Twitter: 'This is a missed opportunity to end the killing of birds in spring, which most people believe should stop.'

Hunters are a powerful political lobby group in Malta, and the leaders of the two main political parties said before the vote that they did not support a ban on spring hunting. The European Court of Justice gave Malta special permission to hunt Quails and Turtle Doves in 2009, ruling that a limited period should be allowed because hunters did not have enough birds to hunt in the autumn season.

According to data compiled by the Maltese Government – based on the hunters' own reports – about 2,480 Turtle Doves and 1,688 Quails were shot during the 2014 autumn season, the lowest number ever recorded. In spring 2014, 4,131 Turtle Doves, 38% of the permitted quota, and 637 Quails were shot. But under-reporting of 'bags' is believed to be standard practice.

Saviour Balzan, an anti-hunting activist and managing editor of the English language newspaper *MaltaToday*, said: 'We did what we could. We didn't do it for our personal ends. Today in 2015, we know that at least 49% of the electorate does not want spring hunting.'

Remember to vote on 7th May

On 7th May, as well as the General Election, council elections and mayoral elections, there is another voting opportunity. It's the online poll to establish Britain's national bird, organised by 'Urban Birder' David Lindo: www.votenationalbird.com

The ten candidates include the incumbent (since 1965) Robin *Erithacus rubecula*, plus Wren *Troglodytes troglodytes*, Blue Tit *Cyanistes caeruleus*, Blackbird *Turdus merula*, Mute Swan *Cygnus olor*, Kingfisher *Alcedo atthis*, Puffin *Fratercula arctica*, Barn Owl *Tyto alba*, Red Kite *Milvus milvus* and, significantly, Hen Harrier *Circus cyaneus*.

It's the last-named species which makes voting for Britain's National Bird every bit as political as any other vote you may cast on 7th May. The Hen Harrier was one of 60 species on the 'long list' that David Lindo took to the Birdfair last August. Some 70,000 votes were cast to whittle these candidates down to the final ten, with the Hen Harrier, teetering on the brink of extinction as a breeding bird in England, receiving a lot of backing to make it to the shortlist.

The winner of this entirely unofficial vote will be announced soon after the online polls close at midnight on 7th May. In other words, we could have a national bird long before we know who our national leader – or leaders – will be.

Swift conservation

Edward Mayer, one of Britain's leading 'Swift nuts', has written in to tell us about the revision of the series of leaflets which aim to help householders make their homes more friendly for Common Swifts *Apus apus*. There is a whole array of really well-put-together leaflets freely available at www.swift-conservation.org/OurLeaflets.htm

And, while you're keeping an eye on the skies looking for the return of your Swifts, bear in mind BTO's national House Martin *Delichon urbicum* survey this year. See www.bto.org/volunteer-surveys/house-martin-survey for information on how you can help.

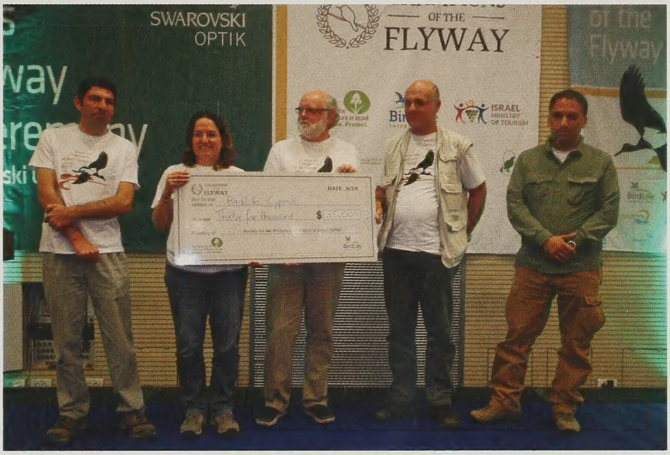
Champions of the Flyway 2015

Organised by the Society for the Protection of Nature in Israel (SPNI) and BirdLife International, and supported by a host of sponsors from across Israel and the rest of the world, the second Champions of the Flyway bird race took place in Eilat and southern Israel on 25th March this year. Fifteen international and 16 Israeli teams entered the 24-hour competition to record the most species, highlight the importance of the Israeli flyway for migratory species and raise money to target the illegal and increasing slaughter of millions of birds in Cyprus.

Altogether, a total of 231 species was recorded by all the teams, but it was the 'American Dippers', all the way from Cape May Bird Observatory, that took the top international category prize with a score of 168, narrowly beating the highly fancied 'Arctic Redpolls' from Finland into second place on 167, and the 'Northern Lights' (also from Finland) and 'Reservoir Birds' (from Spain) into joint third with 163 species. Worthy winners of other categories in the competition were the 'Birdwatch/BirdGuides Roadrunners', who won the Guardians of the Flyway award for the team that raised the most sponsorship, and the 'Next Generation Birders', who won the Knights of the Flyway award for the team that disseminated the most news on the day. The highest-scoring local team was the 'Jerusalem Bird Observatory Orioles', with an amazing 179 species, closely followed by the 'Pied Bushchats' from the Yerucham Centre for Creative Ecology on 176 and the 'Terns' from Ma'agan Michael on 170.

Most importantly, over $50,000 has so far been raised for conservation causes across the region. The main recipient this year was BirdLife Cyprus, and they received a cheque for $35,000 from BirdLife International, as well as three pairs of Swarovski binoculars, the first-place prize magnanimously donated to them by the American Dippers. These will go towards helping monitor the illegal killing of up to 2.5 million birds every year in Cyprus, as highlighted in N&c last month.

A feature of the race was the number of children who took part. Indeed, in the Israeli category, about half of the competitors were women or children. Conservation in Israel is certainly in the ascendancy, and if this competition is any indication, the future is bright.



136. BirdLife Cyprus receiving a cheque for $35,000 at the culmination of the 2015 Champions of the Flyway event.

Yuval Dax/Israeli Ornithological Centre

Observant readers will notice that the 'BBRC Vagrants' did not feature among the top teams. Luckily, our bruised egos can be eased, as there is still time to donate to this worthy cause. The Just Giving page will remain open throughout April and into May. Please do visit www.justgiving.com/COTF2015BV and consider donating, and thank you to those of you who have already donated. The event will be promoted at the Birdfair in August when registration for *Champions of the Flyway 2016* will open.

(Contributed by Paul French – captain, BBRC Vagrants)

Allen's Gallinules in Malta

A News & comment item in the January issue (*Brit. Birds* 108: 8) reported the first breeding record of Allen's Gallinule *Porphyrio alleni* in Europe, in Malta in July 2014. Fuller details were published in *Dutch Birding* (Vol. 36, pp. 327–330). However, Ray Galea, chairman of the Malta Rarities and Records Committee, wrote to N&c last month with news that the aforementioned committee had not accepted the record of breeding. In short, it was felt that such a landmark record for Europe should be accompanied by some form of hard evidence, such as pictures/videos – and the only photographs published are of the adult bird present in late December 2013 and January 2014. If more evidence comes to light, it will be considered, but for now at least, the record should be considered not proven.

Northern Irish conservation groups face 100% cuts

RSPB Northern Ireland has warned that confirmed 100% cuts to the Natural Heritage Grants Programme will have a devastating effect on Northern Ireland's countryside, including important sites such as Rathlin Island (in Co. Antrim), Lough Erne (Co. Fermanagh) and Lough Beg (Co. Londonderry).

The RSPB is facing a cut of £150,000 annually to its reserves and education programmes. On Rathlin Island, the society is working to bring Corn Crakes *Crex crex* back to Northern Ireland using funding from the Natural Heritage Grants Programme. With the cuts, however, it's possible that this work will not be completed and the bird will never return to Northern Ireland.

RSPB NI manages more than 40 islands as part of its Lower Lough Erne Islands reserve, creating and maintaining habitat for wetland birds like the Eurasian Curlew *Numenius arquata* and Northern Lapwing *Vanellus vanellus.* Thanks to the efforts of the RSPB and local landowners, 2014 saw 47 pairs of Curlews recorded on the reserve with two-thirds of those pairs hatching chicks. The reserve now holds around 10% of the all-Ireland breeding population of this species, but this work is now under threat because of the funding cuts.

Fermanagh Area Manager for RSPB NI, Brad Robson, said: 'The sad reality is that the loss of this money may prevent us from managing some of the best sites in Ireland for Curlews and this may cause their decline to become terminal, meaning the bird becomes locally lost in a matter of years.

'Funding from the Natural Heritage Grants Programme has been fundamental in making sure that Lough Erne provides homes for these severely threatened birds. There is now a real risk that this work can no longer be carried out. Without proper management, the habitat will be at risk and we may lose some of these birds altogether.'

Put your lifetime's birding on BirdTrack

Following Moss Taylor's '*BB* eye' last month (*Brit. Birds* 108: 186–187) asking what will happen to our notebooks – and the precious data therein – when we go to that great bird reserve in the sky, Dr Julian Greenwood has contacted *BB* to explain what he has done to preserve his bird notes.

'I am responding to Moss Taylor's article, where concerns were raised concerning the ornithological content of diaries and their possible ultimate loss to the recycling bin as a consequence of relatives not realising the importance of the diaries' contents. There is a solution and that is BirdTrack (www.bto.org/birdtrack), which has the purpose of monitoring the abundance and distribution of birds in Britain and Ireland. Now, not only do birders submit their lists for Britain and Ireland, but they submit global lists and further, they submit lists from years ago.

'Although I began birdwatching in the early 1960s, it was not until Tuesday 4th April 1967 (at Castlemorton Common in Worcestershire) that I began to keep a diary, with the list of 21 species recorded that day including Yellowhammer *Emberiza citrinella* and Great Spotted Woodpecker *Dendrocopos major.* All of my birdwatching lists from that time onwards have now been submitted to BirdTrack. A look on the BirdTrack website reveals that birders have submitted records in appreciable numbers since the 1950s and indeed there are sporadic records that go back as far as 1901. Surely then BirdTrack is a way of putting the contents of birding diaries into the public realm. The data will then be saved from loss and not only that, the lists of birds will make a valuable contribution to our knowledge of abundance and distribution of our birds in those pre-Atlas years.

'So I make an appeal: if YOU have notebooks going back over the years, you can ensure that at least the sightings are preserved forever (and made use of) by putting them on to BirdTrack, which surely must be one of the simplest to use and most valuable citizen science projects available to us today.'

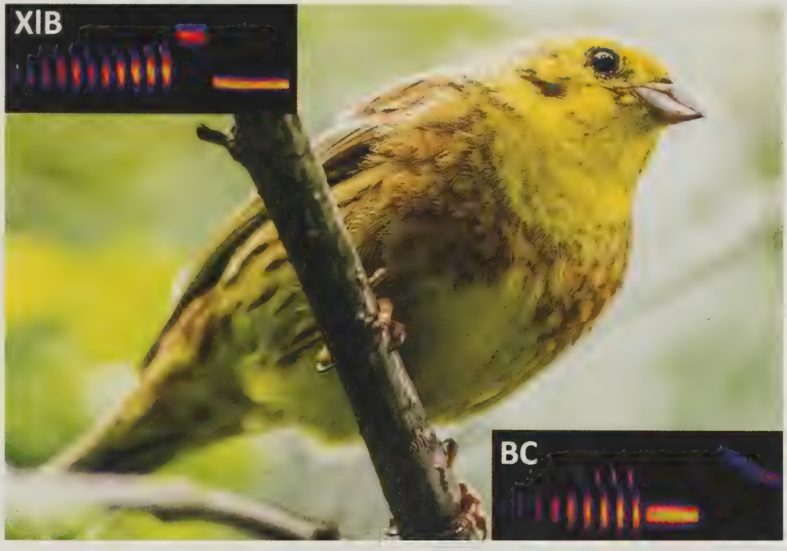
Top tips from the RBBP

Since the beginning of March, the Rare Breeding Birds Panel has been promoting a tip of the week, suggesting some activity that birders could participate in to help find and record rare breeding birds. At times, the focus might be on species of uplands or lowlands, forest or coast, north or south, but over the six months there will be something for everyone. A new tip will be added to the RBBP website home page each week: www.rbbp.org.uk

In March there were tips on finding and recording species as diverse as Northern Goshawk *Accipiter gentilis,* Lesser Spotted Woodpecker *Dendrocopos minor,* Willow Tit *Poecile montana* and Hawfinch *Coccothraustes coccothraustes* while in April the featured species were Little Egret *Egretta garzetta,* Water Rail *Rallus aquaticus,* Short-eared Owl *Asio flammeus* and Cetti's Warbler *Cettia cetti.* A new tip will be added each week until the end of August – why not drop by each week and take a look?

Do your Yellowhammers have a local accent?

The citizen science project *Yellowhammer Dialects* is looking for volunteers to help with mapping the dialects of Yellowhammers in Britain. No special equipment or knowledge is required. The characteristic song of the Yellowhammer is easy to recognise and devices such as mobile phones or digital cameras make recordings of sufficient quality for dialect identification. Yellowhammers, once common in the British countryside, were introduced to New Zealand 150 years ago and since then the New Zealand Yellowhammers have been geographically isolated from their ancestral population. Have Yellowhammers retained their original song types or have they devolped new ones? Can the song provide more insight into the history of their spread in New Zealand? Researchers are especially interested in recordings from southern England, since Yellowhammers introduced to South Island were probably caught there; however, recordings from any locality are welcome. Read more at www.yellowhammers.net



Petr Jan Juračka

137. Male Yellowhammer *Emberiza citrinella*, with sonograms of the two most common dialects in the UK.

Big Garden Birdwatch

It was finches that attracted the attention of the RSPB's number crunchers when the results of January's Big Garden Birdwatch were collated. In excess of 585,000 people across the country spent an hour during the weekend of 24th–25th January watching their garden – that's almost 100,000 more watchers than in 2014.

More than 8.5 million birds were logged with sightings of every bird in this year's top 20 up on the numbers recorded in 2014, apart from Common Chaffinch *Fringilla coelebs*, Goldfinch *Carduelis carduelis* and Greenfinch *Chloris chloris*. Despite being Red-listed species of conservation concern, the House Sparrow *Passer domesticus* and Common Starling *Sturnus vulgaris* both retained the number 1 and 2 spots respectively in the Big Garden Birdwatch (BGB). The Blackbird was up to third place in 2015 from fourth in 2014 and was the UK's most widespread garden bird after it was recorded in more than 90% of gardens. In fourth place was Blue Tit, in fifth Wood Pigeon *Columba palumbus* and in sixth Chaffinch. The average number of Robins seen visiting gardens was the highest since 2011, helping it to climb three places to number seven, its joint highest-ever position in the BGB rankings.

Although the BGB results showed a drop in finch numbers, RSPB Conservation Scientist Daniel Hayhow was not too concerned. He said: 'Despite the cold spell in late January, the finches may not have been as reliant on food found in our gardens because of a decent natural seed supply in the wider countryside this winter following a good summer. On the other hand, during the cold spell, birds like Blue Tit and Robin would still be more reliant on food found in our gardens.'

Yet Greenfinch numbers have been in long-term decline, 53% since 1979, which is probably due to trichomonosis. Intriguingly, the top four locations for Greenfinch in this year's BGB were islands – Orkney, Scilly, Eilean Siar and Anglesey – perhaps suggesting that the disease hasn't spread to these areas yet. There is slightly better news for the House Sparrow, since its long-term decline appears to have continued to slow, and it remains the most commonly seen bird in our gardens. Nonetheless, it remains of conservation concern, since numbers have dropped by 57% since 1979.

BasraReedWarblergate

An intriguing case of what appears to be modern-day ornithological fraud has come to light, involving one of the Western Palearctic's least-known birds, the Basra Reed Warbler *Acrocephalus griseldis*. A paper published in the Taylor & Francis journal *Zoology in the Middle East* (Al-Sheikhly *et al.* 2013), based on a study in Iraq and carried out mostly in 2006 and 2007, made a number of claims about the species' breeding biology which, on closer examination, simply didn't stack up. The figures and conclusions (for example, it was claimed that over 40% of the 317 males studied were polygynous) were seemingly impossible to achieve without undertaking a long-term trapping and colour-ringing programme to allow identification of individual male and female birds. The authors claimed to have examined 971 nests over the study period, yet there was almost no mention of the methods and resources employed to gather the data. A recent letter highlighting the discrepancies (Porter *et al.* 2015), signed by 14 mainly British-based ornithologists and pulled together by *BB* trustee Richard Porter, has now been accepted and published by *ZME*; the effort involved in that was considerable, but the saga is essential reading for anyone seeking to learn more about this globally Endangered species. For further details, see the OSME website, http://bit.ly/114DdHJ

Mudhafar Salim

138. Basra Reed Warbler *Acrocephalus griseldis*.

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Cooperative attacks by urban Peregrines on Common Buzzards

Nick Dixon and Andrew Gibbs

Abstract Observations of the Peregrine Falcons *Falco peregrinus* that nest on a church in Exeter city centre have revealed levels of interspecific aggression previously unrecorded in Britain. This paper summarises the frequency and timing of coordinated attacks on Common Buzzards *Buteo buteo*, several of which proved fatal. The strategy employed by the Peregrines during a typical attack is described and illustrated.

Peregrine Falcons *Falco peregrinus* have nested in Exeter city centre, on St Michael and All Angels Church, Mount Dinham, since 1997, initially on a ledge at the base of the spire and then, from 2008, in a nestbox inside the spire. The resident pair at this site has bred successfully every year, fledging 51 young between 1997 and 2014 (mean 2.8 chicks per year). The Peregrines' tolerance of human activity at street level allows a year-round, weekly collection of fallen prey remains; data from these, together with detailed observations of behaviour, have provided a valuable opportunity for long-term study of prey selection and diet, as well as other aspects of breeding biology (Drewitt & Dixon 2008; Dixon & Drewitt 2012). In recent years, particular attention has been given to observed interactions with other bird species in the area, most notably the Common Buzzard *Buteo buteo*, which is regularly seen passing high over the city.

Peregrines and Buzzards are often found in the same traditional habitats, such as sea cliffs and upland crags, where aerial encounters and skirmishes can be frequent (Tubbs 1974; Ratcliffe 1993). There are records of Peregrines killing Buzzards in Britain, and Buzzard remains have been recovered at Peregrine eyries, although this is rare (Ratcliffe 1993). Yet in Exeter, the city-centre Peregrines have shown extreme levels of territorial aggression towards Buzzards over the city, something which first came to light during the 2012 breeding season, when ten attacks were recorded and at least three Buzzards were killed. Subsequent observations have revealed a dramatic increase in attacks by the resident Peregrines on passing Buzzards. Such extreme levels of aggression by breeding Peregrines appear not to have been recorded before in Britain.

The Exeter Peregrines have also shown intense aggression towards intruders of their own species in defence of the nest site, dependent young or breeding partner. Since 1997, ND has recorded many territorial disputes with intruding falcons of both sexes. It is interesting to note that the most long-lasting and ferocious fights, between the resident and an intruding female, occurred during 21st–29th March 2009; and the outcome of these disputes was the arrival of the current female. The male Peregrine is believed to have been at the church nest site since March 2005. Neither of the adult Peregrines is ringed, and we therefore cannot prove that the same individuals have been paired since 2009, although we strongly believe that this is the case. This is based on almost daily observations of familiar behaviour of both birds at the church, by a variety of experienced watchers. There have been no gaps in occupation by either bird, and since they hold territory all year they can both be

Nick Dixon

139. St Michael and All Angels Church, Exeter, August 2007, showing the southeast aspect of the church where the Peregrine Falcons *Falco peregrinus* nest.

seen daily on regular perches. Furthermore, the female is distinctive in that she is noticeably small for her sex, and only slightly bigger than the male.

Methods

Following the attacks on Buzzards witnessed in 2012, we were keen to see whether this level of aggression was maintained in subsequent years. With attacks by the Peregrines being recorded from the early months of the year, we attempted to log all reported incidents, and reviewed the archived observations from previous years. During the breeding seasons of 2013 and 2014, we increased the frequency of our visits to the church to observe the territorial behaviour of the pair. AG was able to visit and record interactions on most days during May and June, the months when previous attacks were seen to be most prevalent. Watches were undertaken from a public car park roof, 150 m from the church, with panoramic views of the site and over the city.

Both morning and afternoon watches were undertaken, between two and four hours in duration. Binoculars proved to be more useful than a telescope, offering a wide field of view and enabling the watcher to keep up with fast-moving events more easily. The following details of each attack were recorded, where possible: a) initial location of Buzzard when attacked, b) nature of attack (by one or both members of the pair), c) escape/attempted escape direction of Buzzard, d) final outcome of attack, e) location of any Buzzard brought down by the attack, f) number of stoops made during attack, g) date, time and duration of attack.

In addition to our observations, and since it became apparent that the number of incidents was increasing, local residents and wildlife organisations were asked to record any interactions seen. Accordingly, more than 20 attacks were observed and reported during the fledging and post-fledging period by local residents and other observers. A grand total of 103 attacks were witnessed during the six-year period 2009–14 (table 1), 79 (77%) of these observed by one or both of the authors.

Annual frequency of attacks

Observed attacks on Buzzards fall into two main categories: those by a single Peregrine and those by the pair working in tandem. Table 1 summarises all attacks recorded during 2009–14.

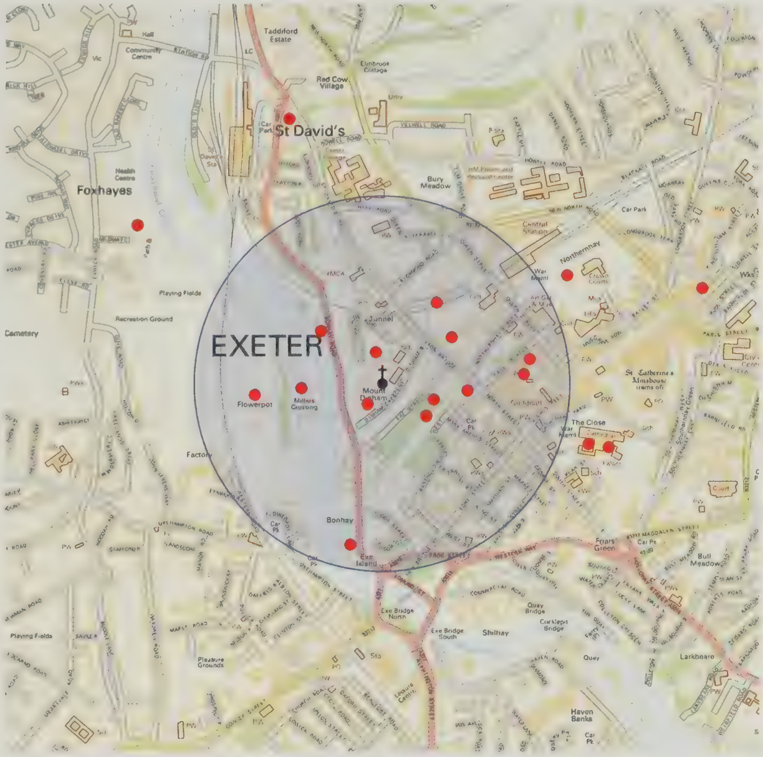

Fig. 1. Map of Exeter city centre showing the precise locations of the 19 downed Common Buzzards *Buteo buteo* described in the text. The map is a 2 km x 2 km square, centred on St Michael and All Angels Church, Mount Dinham, and the blue circle shows a radius of 500 m from the church. This map contains public sector information licensed under the Open Government Licence v3.0.

The first known observation of a Buzzard being attacked by a Peregrine from St Michael's was on 15th June 2009. The female Peregrine, which took over tenancy of the nest site in late March, chased and repeatedly stooped onto a Buzzard, high over the city centre, driving it away to the south. The brood in the nestbox was 20 days old at that point and the first chick fledged on 7th July. The next incident was recorded the following year, on 1st June 2010 (first chick fledged on 7th June), when both Peregrines chased and carried out multiple stoops onto a Buzzard. All three birds were eventually lost from view behind buildings.

Three attacks observed in 2011 were reported to us only in 2013, when observers became aware of our interest in this behaviour, but in 2012 the Peregrines showed noticeably heightened aggression towards Buzzards over the city. Ten attacks were recorded, four of which resulted in a Buzzard being downed. This 40% 'success rate' was due to the Peregrines acting cooperatively,

140. The Peregrine Falcons *Falco peregrinus* at the St Michael's nest site, June 2011. The adults are on regular perches, the female on the trefoil entrance to the nest, with the male (and his shadow) above her on the ridge of the gable. Two juveniles can just be seen within the trefoil.

Richard Heeks

with attacks proving fatal on two of the four occasions when a Buzzard was downed. The two fatal attacks both occurred on 9th June, the same day that the young Peregrines fledged. Over the following weeks, further attacks were witnessed, and on two occasions, in July and October 2012, a juvenile Peregrine joined the adults in chases and attacks (Dixon 2013).

In 2013, daily watches were undertaken throughout the crucial period of the breeding season (pre- and post-fledging). As a result, during an eight-month period a total of 45 attacks were observed, ten of which resulted in a Buzzard being downed (22%), all ten as a consequence of attacks by two Peregrines working in tandem. Of the ten downed Buzzards, four were found grounded or stunned but later recovered and flew off. One was found dead and five other downed Buzzards were either not found, despite a search, or fell where it was impossible to retrieve them. During June 2013, intense and particularly aggressive attacks were observed frequently with 28 logged in one 15-day period. On two consecutive days at the time of fledging (8th–9th June), four separate Buzzards were observed being attacked on each day, with three of the eight being downed.

In 2014, the pattern of Buzzard attacks continued with 43 recorded, the vast majority again in May and June. During these attacks, three Buzzards were knocked to the ground, but the outcomes of a majority of the attacks (60%) were unseen, since many occurred at the limits of the Peregrines' territorial range. We were unable to conduct watches after June, and no further incidents were reported by other observers after that time.

In summary, since 2009 a total of 103 attacks have been observed on Buzzards over Exeter. Of these, 81 (79%) were carried out by two Peregrines working together, and during these coordinated attacks 17 Buzzards (21%) were seen to be knocked to the ground. From these attacks, three Buzzards were killed and the body retrieved by the observer. A further five dead Buzzards were found in the vicinity of the church following presumed attacks. Eleven Buzzards were found injured or stunned following observed (seven) and presumed (four) attacks. Six were seen to recover quickly and fly off. Two of the eleven were found by members of the public and taken to local vets. Combining the observed attacks (103) and the nine dead/injured/stunned Buzzards from presumed attacks gives a minimum of 112 attacks by the Peregrines on Buzzards over the city to the end of 2014. All the Buzzards found dead, injured or stunned were found within 1 km of the church (fig. 1).

The majority of attacks witnessed during this six-year period started over the city, within 1 km of the church. Although Buzzards flying over this area came from all points of the compass, most appeared from the north, which may relate to birds loosely following the course of the nearby River Exe. The passage of such birds over the city brings them very close to the church and, since the falcons perch mainly on the south side of the spire, they may be first seen by the Peregrines when almost overhead.

Table 1. Observed attacks by Peregrine Falcons *Falco peregrinus* on Common Buzzards *Buteo buteo* in Exeter, 2009–14. Those Buzzards hit and observed falling to the ground were recorded as 'downed'. The term 'driven off' was used where Buzzards were seen leaving the territory following an attack, whereas 'unseen' means the outcome was unknown, owing to the distance involved or the birds being out of sight behind buildings, etc.

	no. of attacks	female	male	single bird, sex unknown	pair	outcome of observed attacks		
						downed	driven off	unseen
2009	1	1						1
2010	1				1			1
2011	3				3			3
2012	10		3		7	4	1	5
2013	45	1	4	2	38	10	5	30
2014	43	7	3	1	32	3	14	26

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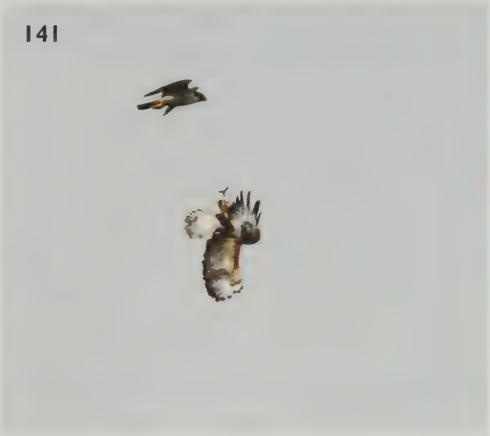

Chris Wilson

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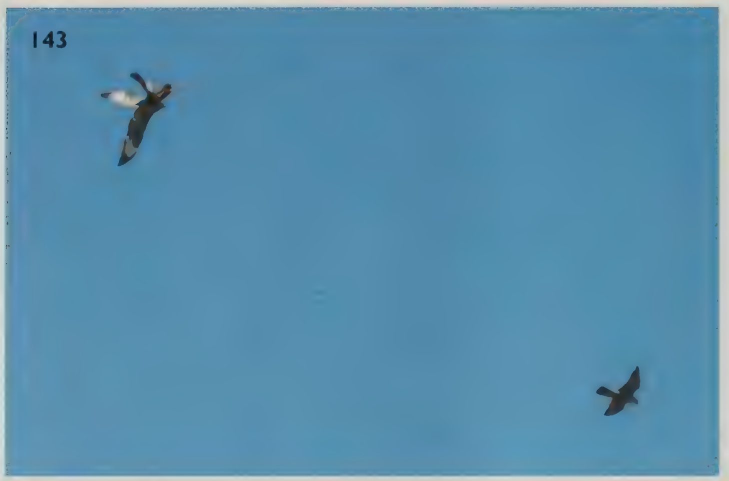
141–147. Flight shots showing attacks on a Common Buzzard *Buteo buteo* by Peregrines *Falco peregrinus* in Exeter, Devon. The first shot (141), taken over the Exe Estuary in October 2014, shows characteristic Buzzard defensive behaviour, the hawk turning upside down to present its talons towards its attacker; this is typically seen during the first stoop by a pair of Peregrines working in tandem. The remaining photos show the St Michael's Peregrines working together during an attack on a Buzzard on 9th June 2013. Plate 142 shows the male Peregrine below the Buzzard, having completed the first stoop; the Buzzard is in the process of righting itself after presenting its talons to the male, while the female (above) prepares to undertake her stoop.

Strategy and behaviour during the attacks

It is at the point when the young no longer require brooding, around 10–14 days after hatching, that the behaviour of the adult Peregrines appears to change and they become even more aggressive towards Buzzards. At this stage, both adults spend much more time perching out of sight of the young but bring food in regularly. In the three weeks prior to fledging, when absent from regular perches on the church, the adults are often to be found soaring high over the city. Initially, we assumed that this was hunting behaviour, but after many hours of observation we now believe that the chief purpose of this behaviour is to patrol the territory.

During a typical attack, the following pattern of cooperative behaviour is demonstrated. When a Buzzard is first seen by the Peregrines, either from their regular perches or from the air when soaring in their territory, they utter alarm calls followed by a



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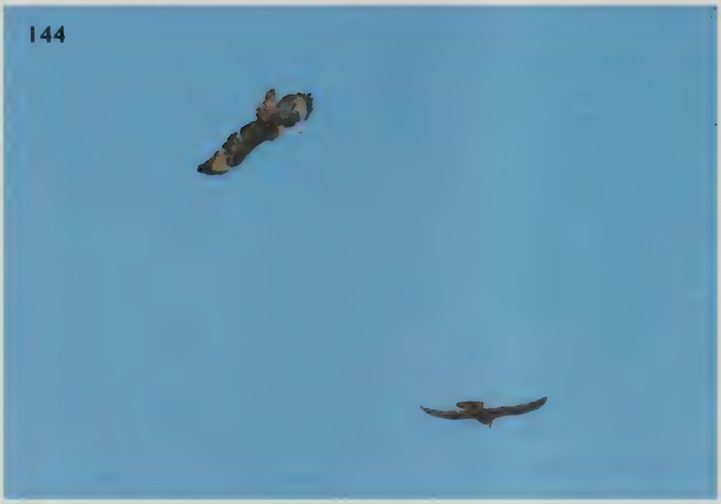

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143–147. Photographs of the St Michael's Peregrines attacking a Buzzard on 9th June 2013 (continued). Plates 143 & 144 show the Buzzard righting itself after the first stoop. The behaviour of the two adult Peregrines working in tandem is obviously difficult to photograph, but plates 145 & 146 show the crucial moments before a direct hit on the Buzzard by the female Peregrine, her talons out. The final image, 147, shows the Buzzard after a direct hit, the female below and the male above. The Buzzard was killed as a result of this attack.

determined flight up to an attack position above the Buzzard. The Buzzard, now aware of a threat, attempts to leave the area.

The male Peregrine stoops first, down onto the Buzzard, which in response flips over, presenting its talons in defence. The female Peregrine times her stoop to follow shortly after the male's, in an attempt to hit the Buzzard on its head or upperparts just as it has righted itself after the male's attack, and before it can again present its talons in defence. Meanwhile, the male swoops back up, ready to begin a second cycle of attack as soon as the female returns to a suitable height above the Buzzard. This basic pattern is then repeated. Importantly, the stoop made by the male appears to be a 'distraction stoop', seemingly aiming to provide the best opportunity for the larger female to strike the upperside of the intruder. The male has been observed to loop up then 'wait on', high above the Buzzard, giving the female time to reach the same level, and to maintain the synchronicity of the attacks.

This cycle of double attacks, or 'stoop-cycles' is repeated, continuing until either the Buzzard is hit and downed or it is driven out beyond the territory boundary. All of the attack stoops made by the Peregrines are vertical or near-vertical, from a position more or less directly above the Buzzard. Sometimes an attack begins as a 'solo attack', usually when the adults are patrolling in different parts of the territory. Alarm calls by the solo attacker alert the second adult and the described pattern of stoop-cycles is usually initiated quickly. On one occasion, however, the female had made 20 individual stoops before the male arrived from another part of the territory. Five 'cycles' followed, making a grand total of 30 Peregrine stoops in that particular attack.

Once the intruder has been dealt with, the falcons usually return to perch on the church but can seem unsettled for up to ten minutes thereafter. Behaviour during this period includes brief periods of alarm calling while

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making short return flights out from regular perches or from the entrance to the nestbox. Occasionally, the male has been recorded perching on the metal cross on the very top of the spire (72 m above ground level).

The events often start high over the city, with all birds gradually losing altitude during the attacks, and often until they are lost from view behind buildings or trees. The longest attack to date has been timed at nine minutes, when a Buzzard was repeatedly attacked over the city and driven east, almost to the territory boundary. In attempting to escape, the Buzzard then turned and flew back towards the city centre, being stooped upon continually, before we lost sight of the birds as they headed north. A more typical attack was captured by a BBC film crew on 26th June 2013 (for the *Urban Jungle* programme shown on 31st August 2013). Close examination of the unedited footage showed the adults making 21 stoops in total during an attack period of 1 minute 52 seconds. Brief highlights of that sequence are available online at www.bbc.co.uk/news/uk-england-23519183

While the majority of cooperative attacks feature the adult members of the pair, on three occasions the juvenile Peregrines have been seen to join the adults in attacks – in June and October of 2012 and June 2014.

During the 2014 season, we attempted to record the number of stoop-cycles during each attack. We recorded between one and 12 stoop-cycles (i.e. 2–24 individual stoops) per attack, with a mean of 5.11 cycles (n = 26). A single cycle is often sufficient to drive away a Buzzard if the attack starts close to the territory boundary.

In some attacks, a Buzzard may be struck more than once by the female. On 8th June 2013 (during the fledging weekend, when separate attacks on four Buzzards in a single day were observed), a Buzzard was chased and attacked by both adults. Following a direct strike by the female, the Buzzard began to fall, body first, both wings trailing above it. The female Peregrine looped back up and stooped again, hitting it for a second time. The impact from this blow caused the Buzzard's wings to fan out and it began to spin or 'helicopter' down. Yet the female stooped once more and hit it for a third time, at which point the Buzzard tumbled towards the ground. Unfortunately, it was lost from sight behind trees adjacent to the railway line and we were unable to retrieve it.

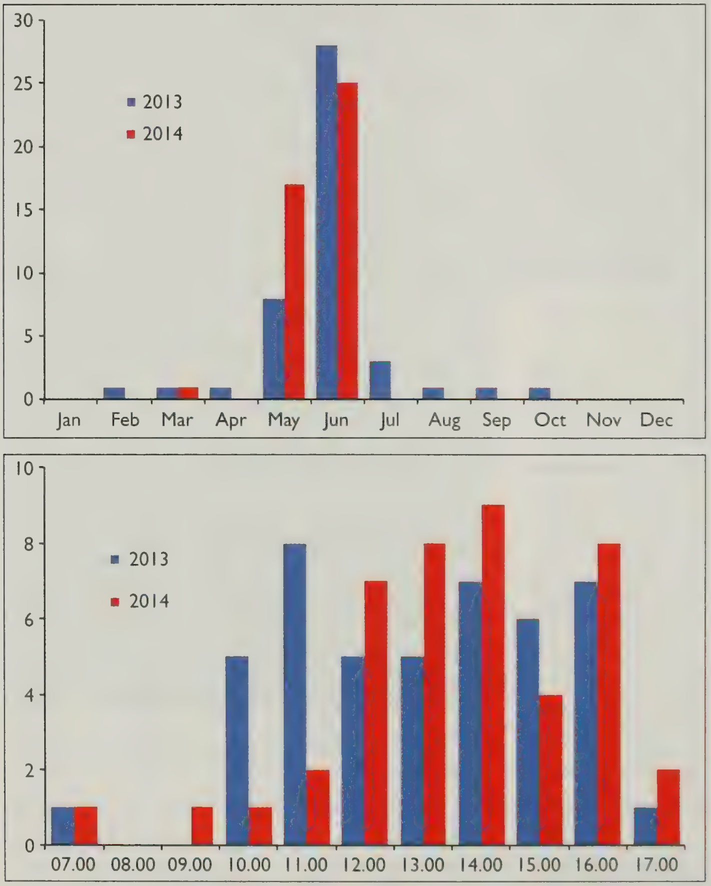
Seasonal and diurnal timing of the attacks in 2013 and 2014

The majority of attacks witnessed occurred during late May and June (fig. 2). With the juveniles fledging on 8th–9th June in both years, it is not surprising that the adult Peregrines were most protective during this period. In the four weeks prior to fledging, the juveniles do not need brooding and both adults are occupied with hunting and patrolling their territory.

All but six of the 88 observed attacks in 2013–14 were carried out between 10.00 and 17.00 BST (fig. 3), which matches almost exactly the most active part of the day for soaring Buzzards in late spring and early summer (Peter Dare pers. comm.).

Of the 13 Buzzards that were downed from observed attacks in the two years, 12 were attacked between 10.00 and 16.30 hrs, and one in the late afternoon at 17.45. The attacks on Buzzards at 07.30 hrs (3rd June 2013) and 07.45 hrs (1st June 2014) seem exceptionally early in the day. We believe that these may have involved birds that were grounded by an attack the previous day and were attempting to leave the area having taking overnight refuge in trees.

The maximum number of attacks on a single day during the two years was five (during a three-hour watch on 21st May 2014), while four attacks per day were recorded on five occasions (2nd, 8th and 9th June in 2013, 16th May and 9th June in 2014).



Figs. 2 & 3. Timing of attacks by Peregrine Falcons *Falco peregrinus* on Common Buzzards *Buteo buteo* over Exeter in 2013 and 2014.

Weather conditions

All observed attacks in 2012 were in good weather, during dry, warm and breezy conditions. Similarly, during 2013–14, the majority of attacks were seen on sunny, breezy days, during which Buzzards are much more likely to be flying over the city than on still, overcast days. No attacks were observed or reported during wet weather.

Other species

During 2009–14, we also recorded two territorial interactions with Red Kites *Milvus milvus*. Kites are recorded in small numbers on passage in all months of the year, but their numbers peak in May and June (Tyler 2010). The first incident, on 4th June 2011, was recorded by Richard Heeks, who commented that the territorial behaviour was very different from, and far less aggressive than, comparable attacks on Buzzards. The second incident was on 16th June 2014, observed by AG, and again it was noted that while both Peregrines showed territorial behaviour and stooped at the kite, there was a lack of coordinated vertical stoop-cycles and the intensity of aggression typically levelled at Buzzards was missing. The Peregrines gave up their attacks on the second kite when it was still within 200 m of the church, a distance far closer than any Buzzard would have been tolerated. Other than these two Red Kites, the Exeter Peregrines have shown no interest in a variety of other species seen flying over the church or through their territory, including Eurasian Sparrowhawk *Accipiter nisus*, Common Raven *Corvus corax*, Carrion Crown *C. corone* and various species of large gulls.

Locating downed Buzzards

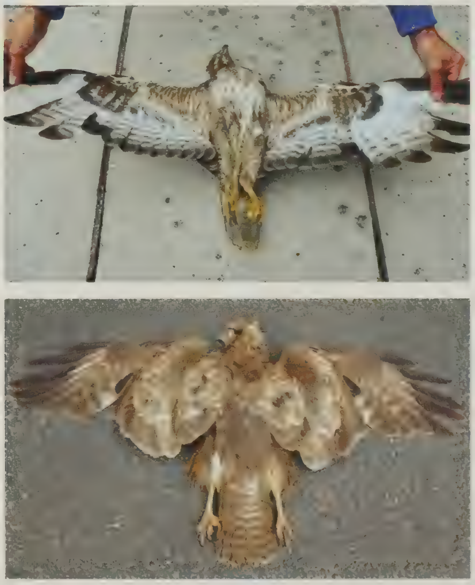
When Buzzards were observed falling to the ground, we tried to pinpoint the location and retrieve the bird if the attack was fatal. We observed several downed Buzzards that were injured or momentarily stunned, some on the ground or on buildings, others that had sought shelter in trees. A Buzzard at ground level in the city causes uproar among the local gulls and corvids; stunned, injured and even dead Buzzards are mobbed almost immediately by Herring *Larus argentatus* and Lesser Black-backed Gulls *Larus fuscus*, Carrion Crows and Magpies *Pica pica*, which helped to alert us to the locations. Table 2 shows details of all 19 downed Buzzards located in 2012–14.

Five dead Buzzards have so far been

Table 2. Details of all 19 Common Buzzards *Buteo buteo* found following observed and presumed attacks during 2012–14. * denotes body retrieved.

date	attack seen	outcome	distance from church (m)
21 May 2012	No	found dead in river	270
9 June 2012 *	Yes	found dead in street	170
9 June 2012 *	Yes	found dead in park	480
16 May 2013	No	found alive, taken to vet, released	800
30 May 2013 *	No	found dead near river	510
31 May 2013	No	near cathedral, survived	521
5 June 2013	No	near church, survived	105
8 June 2013	Yes	found in park, survived	121
19 June 2013	No	mobbed by gulls, hit by train, dead	190
20 June 2013	Yes	perched in trees to east of church	176
25 June 2013	No	found alive, taken to vet, released	230
26 June 2013 *	Yes	found dead in road	780
27 June 2013	Yes	fell onto car park roof, survived	320
9 July 2013	Yes	fell on playing field, survived	379
6 September 2013	No	dead in road in city centre	867
1 June 2014	Yes	attacked by Peregrines in tree	128
20 June 2014	Yes	fell onto cathedral roof, survived	356
22 June 2014	Yes	fell onto guildhall car park	558
24 July 2014 *	No	found dead on house roof	74

retrieved. Two were recovered immediately following observed attacks and photographed in 2012 (plates 148 & 149). Two more were recovered in 2013, one found on recently cut grassland adjacent to the River Exe, and which had been damaged by mowing, the other found freshly dead on a nearby road following an observed attack. The latter, weighing 820 g, was presumed to be male. X-rays and an examination of the corpse by veterinary surgeon John Gale revealed injuries consistent with a high-impact fall onto a hard surface; an open wound on the back was consistent with the raking blow (talon strike) by the female Peregrine that the observers had noted. One particularly unfortunate Buzzard was observed shortly after a presumed attack being chased by gulls at ground level next to a railway line, and was then hit by a train. The only recovery in 2014 was that of a carcase in the roof gulley of a nearby house; it was found by builders in mid July, who confirmed that it had not been there in early June. The mean distance between the nest site and recovery site of all Buzzards found following observed and presumed attacks was 370 m (range 74–867, n=19).


James Clews

John Deakin

148 & 149. Two first-summer Common Buzzards *Buteo buteo* killed by the Exeter Peregrines *Falco peregrinus* on 9th June 2012. The first (above) was found on the pavement 70 m from the church nest site, following an observed attack by both adults at 10.20 hrs. The second attack was witnessed at 13.30 hrs and the body picked up immediately afterwards from a park, within 500 m of the church.

All five dead birds recovered were aged as first-summer birds. A sixth bird (found on 16th May 2013) was aged and sexed during rehabilitation as an adult male.

Discussion

The numerous attacks in 2013–14 partly reflect increased observer awareness of this behaviour, although if attacks had been similarly frequent in 2012 they would certainly have been noticed, by us and other watchers. However, the very wet spring/summer of 2012, in contrast to the generally fine weather in spring 2013–14, may well have depressed Buzzard activity over the city.

ND has been monitoring Peregrines for over 20 years, and has observed the capture of many prey items in flight and cooperative behaviour during hunting flights. However, the intensity of the aggression and repeatedly cooperative nature of the attacks on Buzzards over Exeter is something quite new in his experience. The ruthless, clinical nature of the attacks suggests that the Peregrines are not content simply to drive Buzzards out of their territory, but that there is an intention to kill the intruder, especially during the months of May and June, when the Peregrines have dependent young. Historically, falconers have trained Peregrines to work in pairs to kill large quarry species (Ratcliffe 1993), and it seems that the St Michael's pair has refined their level of cooperation into a highly effective attack strategy.

Attacks (chases and stoops) on Buzzards made by a single Peregrine, of either sex, were sufficient to drive a Buzzard away, but no strikes or downed birds have so far been recorded as a result. During solo attacks, the Buzzard has time to flip over in a defence posture, with talons presented, which puts the Peregrine at risk of injury. However, joint attacks render the Buzzard extremely vulnerable, especially when the timing of the female's stoop is engineered for maximum effect.

The Exeter Peregrines have shown no inclination to follow a fallen Buzzard to the ground, often returning directly to the church. This is perhaps unsurprising in an urban environment, but if the Buzzard has managed to survive an attack and has taken temporary shelter in trees, the Peregrines remain highly agitated. This results in continual alarm calling, repeated flights from the church to the tree and both adults undertaking stoops close to the Buzzard.

On three occasions, we have witnessed juvenile Peregrines joining their parents during attacks, although they were not involved in the coordinated 'stoop-cycles'. It is interesting to speculate whether the juveniles are learning this behaviour through participation and observation. Since the juveniles in 2013–14 were colour-ringed (under licence), it may eventually be possible to identify them, observe their behaviour and answer these questions.

The origins of Buzzards appearing over Exeter city centre are of interest. Devon has a large population of breeding Buzzards, the most recent estimate being of 1,600 pairs in the 1980s (Sitters 1988), although the current figure could be considerably higher. It seems highly unlikely that pairs nesting close to Exeter (and the nearest pair is about 3 km from the church; Peter Dare pers. comm.) would leave established territories to venture across the city, and their offspring do not begin to disperse before late August. It is most likely that the passing Buzzards are immature birds (1–3 years old), searching for a territory (Peter Dare and Robin Prytherch pers. comm.), which is supported by the fact that five of the six dead or injured birds that were aged were first-summers. In fine weather, Buzzards using thermals over the city enter the territory of the Exeter Peregrines during their most protective and aggressive period. The population growth and spread of the Buzzard in Britain in recent decades has increased the likelihood of encounters between the two species, and there must surely be potential for similar behaviour at other sites. Nonetheless, the high level of aggression and the cooperative nature of the attacks on Buzzards in Exeter appear unprecedented in Britain. We would very much welcome any information or observations of similar behaviour from other sites.

Acknowledgments

Our grateful thanks are due to all those who supplied observations, information and photographs: Nick Baker, Mike Booth, Peter Burgess, Stephen Carroll, James Clews, John Deakin, Suzanne Dunstan, John Gale, Richard Heeks, Jess Isden, Elizabeth Hughes, Ronald Hughes, Nigel Pinhorn and Chris Wilson. We are indebted to Malcolm Burgess, Denis Corley, Peter Dare, Robin Prytherch, Roger Riddington and Colin Shawyer, who gave invaluable advice and comments on drafts of the manuscript.

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Stop press To date, we have recorded 31 attacks on Buzzards over Exeter in 2015: two in January, three in February, 12 in March and 14 during 1st–15th April. All of these totals (including that for April) exceeded the previous highest tally for the months concerned. All but four incidents during January–March involved both Peregrines. With incubation beginning at the end of March, the April attacks were all made by a single Peregrine: two by the female and 12 by the male.

The current status of European and Siberian Stonechats in the United Arab Emirates

Alan Harris

North Caspian Stonechat *Saxicola maurus variegatus*

Abstract Observations of stonechat taxa in the United Arab Emirates during a seven-year period, 2008–14, are presented. These suggest that while European Stonechat *Saxicola rubicola* is a regular wintering species, (at least) two subspecies of Siberian Stonechat *S. maurus* are rather uncommon passage migrants. These findings are compared with the status of stonechats in neighbouring countries and with past statements about the status of the forms in the region. Comments on the subspecific identity of Siberian Stonechats in the UAE are also presented.

In the United Arab Emirates (UAE), there has been considerable debate for many years as to which stonechat taxa occur in the country and their relative abundance and phenology. Until recently, many stonechat records were either left unspecified or simply assumed to refer to Siberian Stonechat *Saxicola maurus* (the form that was 'generally believed to occur'; T. Pedersen *in litt.*), while European Stonechat *S. rubicola* was regarded as a rarity, with the Emirates Bird Records Committee asking for substantiation of birds reported in 2006 and 2007. This paper, based on observations by the authors from January 2008 to December 2014, suggests that while the European Stonechat is a regular wintering species from late October to early March, Siberian Stonechat (of at least two subspecies – see below) is in fact a rather uncommon passage migrant in the UAE, mainly in early spring.

The lack of a clear understanding in the UAE has been fuelled, in part, by the taxonomic fluidity of the stonechat complex. In recent years, many authorities have come to regard this complex as comprising three species:

- **European Stonechat** *S. rubicola*, comprising nominate *rubicola* and *S. r. hibernans.*
- **Siberian Stonechat** *S. maurus*, comprising four taxa known to occur in the Western Palearctic (see below) plus two further taxa, extralimital and mainly resident, with distributions centred on the Indian subcontinent and southwest China.
- **African Stonechat** *S. torquatus*, comprising 16 subspecies, all extralimital (bar *S. t. felix* of southwest Arabia, which is predominately resident and not considered further here).

This species-level taxonomy was supported by Svensson *et al.* (2012), who also proposed a revised nomenclature for the two subspecies of Siberian Stonechat that breed in the

Caspian region. These recommendations have been subsequently adopted in the current OSME Region List of Bird Taxa (OSME 2014), and by Gill & Donsker (2015), on which the UAE Annotated Bird Checklist (Pedersen 2014) is based. This revision has not (yet) been adopted by BOURC and we merely note it, without taking a stand on the issue, here:

- **South Caspian (or Byzantine) Stonechat** *S. m. armenicus* (hereafter '*armenicus*') for birds breeding in northeast Turkey and from the southern Caucasus to Iran. (This nomenclature was revised to *S. m. variegatus* by Svensson *et al.* (2012), who deemed *armenicus* obsolete.)
- **North Caspian Stonechat** *S. m. variegatus* (hereafter '*variegatus*') for populations breeding to the north of *armenicus*, from Ukraine to the northern Caucasus and the Volga Delta. (This nomenclature was revised to *S. m. hemprichii* by Svensson *et al.* 2012.)

The nominate form of Siberian Stonechat (hereafter '*maurus*') breeds across a large area of western Russia and south and west Siberia to Kazakhstan, Mongolia and Afghanistan (Collar 2005) and possibly also northeast Iran (Svensson *et al.* 2012). A fourth, more easterly, subspecies is *S. m. stejnegeri*, which has only recently been confirmed to occur in the Western Palearctic (e.g. *Brit. Birds* 107: 636–637) and is not considered further below.

As a result of a general lack of understanding over which taxa occur, there are a number of inconsistencies and confusion between accounts in the published literature for the region. For example, OSME (2014) stated that European Stonechat 'winters Middle East to Iran' and that Siberian Stonechat 'winters in south of [the OSME] region' (nominate *maurus*) with *armenicus* and *variegatus* both wintering in 'Africa; possibly [in the] UAE'. In contrast, Pedersen & Aspinall (2010) cited European Stonechat as 'regular winter visitor in small numbers', and Siberian Stonechat as 'common winter visitor October to March, although decline noted in recent years'. Aspinall & Porter (2011) indicated that European Stonechat is rare in winter along the Arabian Gulf littoral with Siberian Stonechat wintering more extensively in eastern Arabia and '*maurus* most frequently reported'. Cramp (1988) gave the wintering range of migratory populations of European Stonechat as being the Mediterranean basin, North Africa, the Levant and

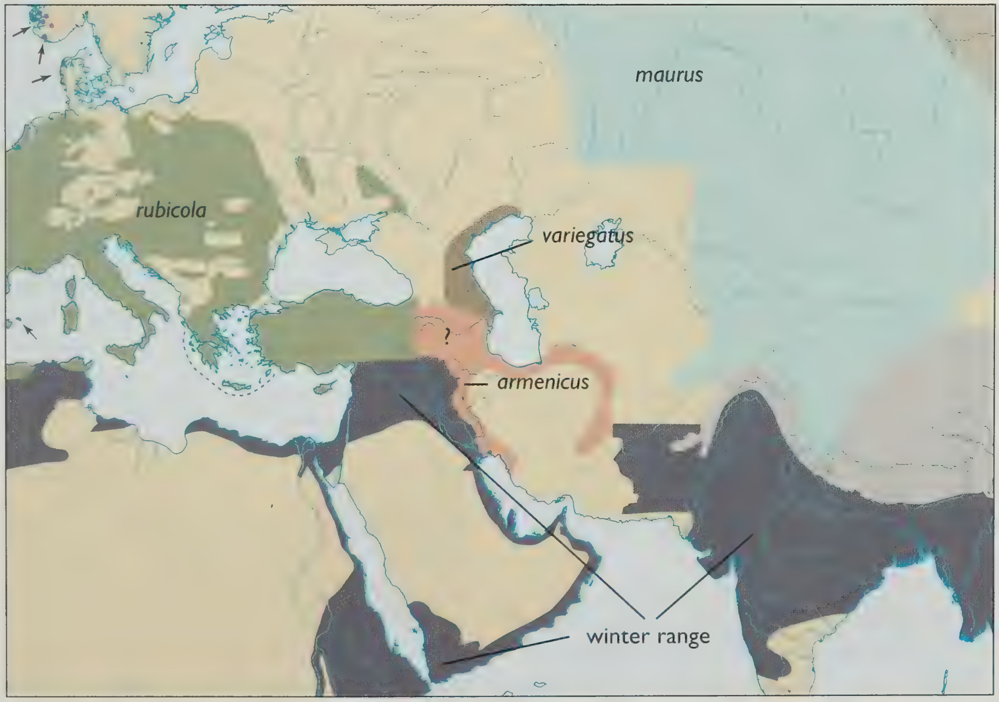


Fig. 1. Breeding distributions of stonechat *Saxicola* taxa relevant to the United Arab Emirates. Adapted from Hellström & Wærn (2011). Note that the winter range refers to all taxa combined.

Table 1. Criteria used in the UAE to differentiate European Stonechat *Saxicola rubicola* from Siberian Stonechat *S. maurus* subspecies *maurus*, *armenicus* and *variegatus*. Note that *S. m. stejnegeri*, while generally regarded as being very close to nominate *maurus* in appearance, is, in some plumage characteristics, intermediate between *maurus* and *rubicola*. See Hellström & Norevik (2014) for details.

	European Stonechat	Siberian Stonechat
Males		
Rump & uppertail-coverts	Whitish rump, although tips of longest feathers rusty when fresh; the white limited in extent (reaching only central tertial) and variably streaked although sometimes (perhaps rather rarely) virtually unmarked. Uppertail-coverts show dark central streaks, generally (but not always) very obvious.	Whitish rump (in autumn with pale orange-buff tips); the white very extensive, reaching beyond shortest tertial. Extent of rump often exaggerated by being conspicuously 'fluffed out'. Uppertail-coverts invariably unstreaked.
Underwing-coverts and axillaries	Smoky-grey; generally appearing rather dark in most views but never solidly blackish nor clearly contrasting.	Solidly black and showing much more contrast than *rubicola*.
General coloration of underparts	Extensively orange, with a rather warm hue, sometimes (particularly for worn plumage in spring/summer) with obviously sullied, greyer flanks, sometimes diffusely streaked.	Usually a softer, less saturated colour, with orange more restricted, particularly in spring when belly and flanks often appear clean and only central breast orange.
Females and first-/second-calendar-year birds until early spring		
Rump and uppertail-coverts	Ground colour rather warm brown, barely contrasting with mantle or tail and with obvious, rather heavy dark streaking; latter also on uppertail-coverts.	Rump whitish or creamy-buff and invariably showing a conspicuous contrast with plain darker tail and mantle. Uppertail-coverts unstreaked.
Underparts	As on male, orange rather extensive and extending well onto belly and flanks.	Orange wash rather faded and pallid, often restricted to breast where forming a rather narrow breast band, highlighting the clean throat.
Throat and supercilium	Pale but rather sullied throat (in autumn), becoming darker brownish-grey due to wear by spring. Supercilium rather diffuse and weak but, on some rather obviously paler and grey-washed.	Throat almost invariably pale and fairly clean, usually contrasting with warmer breast. Generally a pale supercilium evident to some extent, strongest above the eye but variable and highly dependent on viewing angle (as for *rubicola*).
General coloration	Rather dull, drab brown, appearing saturated and often warm brown, but sometimes grey-toned, especially on head.	Generally rather pale; often buff- or sandy-toned.

Yemen with Siberian Stonechat wintering mainly in northeast Africa and western Arabia (*armenicus* and *variegatus*) and mainly northern India to Burma (*maurus*). This paper attempts to clarify this rather confusing picture and resolve the relative status of the various stonechat taxa that occur in the UAE.

Identification features of stonechats in the UAE

Identification of stonechats in the UAE is not always straightforward, particularly for males, requiring prolonged, close views of parts of the bird that are frequently hidden: the rump, uppertail-coverts and underwing. Any records that could not be determined to species (generally due to inadequate views) were left unspecified. The majority of indeterminate birds were males observed at some distance and/or briefly and which did not allow a critical appraisal of salient details. In particular, details of the underwing were frequently impossible to see confidently. However, if rump, uppertail-covert pattern and underparts detail all pointed in the same direction, then identification was deemed secure. In contrast, females were generally easier to assign to species, based on general coloration of underparts, prominence (or otherwise) of a pale throat (and to a lesser extent supercilium) and, especially, rump and uppertail-covert pattern. Key plumage features used in identification are summarised in table 1 and are based on Cramp (1988), Svensson (1992), van Duivendijk (2010), Hellström & Wærn (2011) and observations made by the authors in the UAE. A selection of images from the UAE accompany this paper (plates 150–157) and a useful database of images is available at www.uaebirding.com/photos-birds.html

Results

In all, we observed 443 stonechats in the UAE between January 2008 and December 2014 inclusive; of these, 92% were attributed to species. Records were made during normal birdwatching activities in a wide range of different habitats across the country. The relative abundance and phenology of each species is illustrated in fig. 2.

Our data show a marked difference in phenology between European Stonechat and Siberian Stonechat in the UAE. The former is predominately a winter visitor, with the vast majority of records of that species (93%) between November and February. There were two October records, the earliest on 24th; the few records (6.2%) in March and early April relate to lingering wintering birds and/or a limited spring passage. In contrast, Siberian Stonechat is almost exclusively a passage migrant, mainly in early spring (64% in February and March, with 55% in March alone), with smaller numbers from September to November. The December and January records (7.6%) may indicate a few overwintering birds, although those in January could conceivably be very early spring migrants. In terms of relative abundance, European Stonechat is somewhat more numerous, accounting for 62% of all records, compared with 30% for Siberian. In fact, in most years, Siberian Stonechat is actually significantly rarer than these data imply: some 39 of the 72 March records were during a remarkable influx in 2012. The mean number of records for the month of March in 2008–14, *excluding* 2012, was 5.5 (range 1–12).

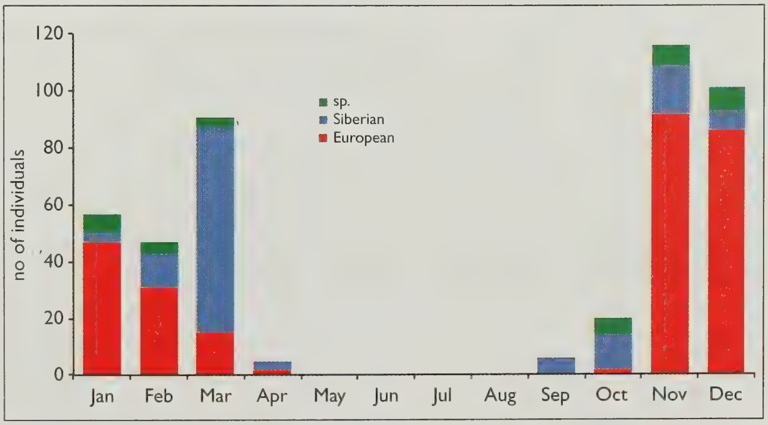
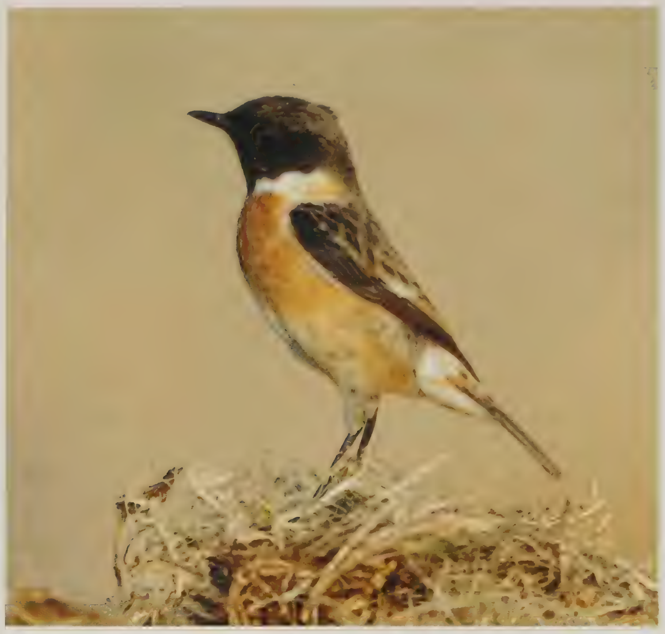


Fig. 2. Distribution by month of 443 records of European *Saxicola rubicola* and Siberian Stonechats *S. maurus* recorded in the UAE, January 2008 to December 2014. Birds not determined to species are also included.

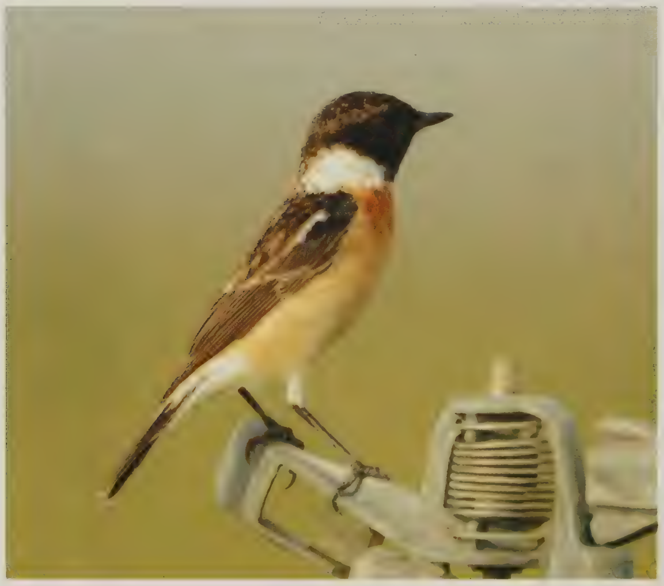
Discussion

Our data are partly at odds with the picture described by sources referred to above, and also with the situation in other Gulf countries. In Kuwait, for example, European Stonechat and Siberian Stonechats of the subspecies *armenicus* and *variegatus* are all regarded as uncommon passage migrants and winter visitors (M. Pope and A. Al-Sirhan *in litt.*). In Oman, records attributed to Siberian Stonechat greatly outnumber those of European Stonechat (Eriksen & Victor 2013); the former is regarded as a fairly common passage migrant and winter



Huw Roberts

150. Male European Stonechat *Saxicola rubicola*, UAE, November 2011. Note the rather uniform and extensively orange underparts, a hint of greyish streaking on the flanks, narrow and rather limited whitish rump and well-marked uppertail-coverts (with several dark streaks evident even in this side view). The slightly brownish-toned remiges compared with the blackish coverts suggest that this is probably a 1CY bird.



Huw Roberts

151. Male Siberian Stonechat *Saxicola maurus*, UAE, March 2013. A typical individual, showing a limited but rather intense orange breast 'bib' compared with the pale orange wash across the unstreaked flanks. The rather large white rump patch is obvious and the unstreaked uppertail-coverts are still softly peach-washed (this is often much stronger in autumn). The obviously brownish remiges, compared with blackish median and lesser coverts, indicate a 2CY bird.

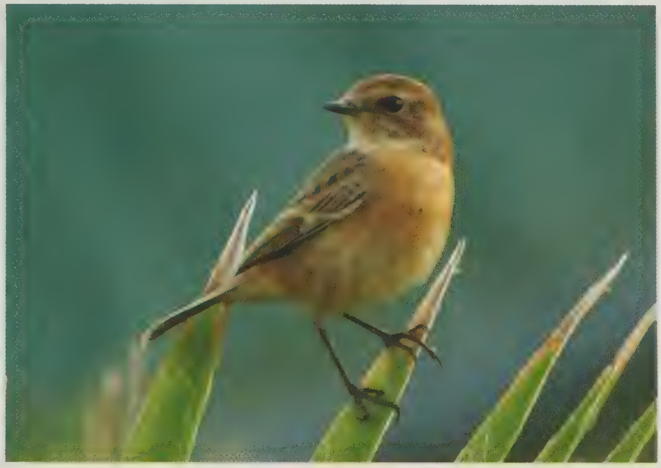
visitor while the latter, with just 16 records, is rare. Yet in Israel, Shirihai (1996) found that European Stonechat was a common winter visitor and migrant, greatly outnumbering Siberian Stonechat, which was primarily a migrant. This is rather similar to the situation we describe for the UAE, although most passage records of Siberian Stonechat in Israel are from autumn, not spring.

Kirwan & Bates (2008) found that of 106 stonechats collected in western Iran between 1940 and 1945 by Walter N. Koelz no fewer than 29 (27%) were attributable to European Stonechat, and most (93%) of those 29 were collected between January and March. This suggests that the occurrence of European Stonechat as a regular winter visitor to the east and southeast of its main breeding range is not a recent phenomenon. Alternatively, the species may breed farther east than is currently mapped by, for example, Urquhart & Bowley (2002) and Svensson *et al.* (2012). Furthermore, Richardson & Chapman (1988), in a general analysis of migration patterns through Dubai, recorded stonechats *S. maurus/rubicola* (then regarded as one species) in small numbers annually from November to March, so it seems quite likely that European Stonechat has been a winter visitor in the UAE, at least in small numbers, for many years. Indeed, a photograph of a female European Stonechat that overwintered in Dubai in 1984 appears in Richardson (1990).

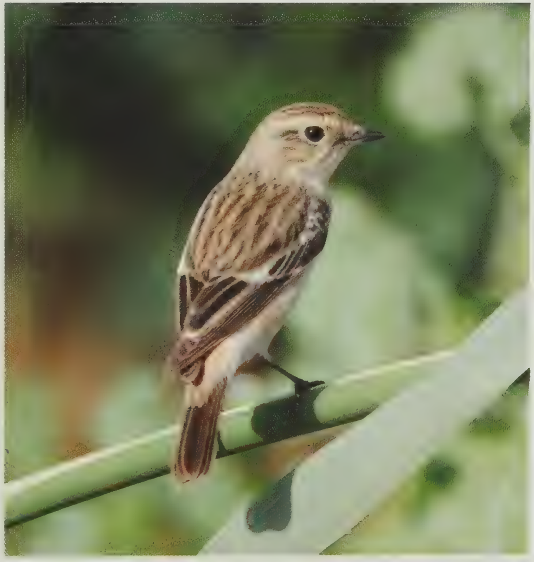
Anecdotal evidence from

observers in the UAE in the 1990s suggests that Siberian Stonechat has declined significantly in recent years (Simon Aspinall pers. comm.) It is also possible that, as well as a decline in numbers, there has been a change in phenology with, for example, overwintering becoming less frequent. Yet it is likely that, at least for European Stonechat, numbers of overwintering birds in the UAE (and presumably elsewhere on the Arabian Peninsula) have increased in recent decades. The vast majority of stonechats in the UAE, either on migration or in winter, frequent habitats such as fodder fields, golf courses or rank wetland edges created by grey water disposal. Such 'anthropogenic' habitats simply did not exist in the country until a few decades ago.

An analysis of stonechat records from all observers in the UAE bird database (provided by T. Pedersen *in litt.*) paints a broadly similar picture to that derived from our data alone, although it shows a markedly greater proportion of Siberian Stonechat records from December and January. However, we suggest that this is due to observers overlooking the fact that some male European Stonechats can show a rather large and obvious white rump, generally regarded as a key identification character for Siberian Stonechat. Such birds have caused confusion elsewhere in Europe, for example in Sicily (Corso 2001), Portugal (Siddle 2006) and Cyprus (Simon Aspinall pers. comm.). In all but the most recent guides (e.g. Svensson *et al.* 2009), examples of male European Stonechats with extensive white rumps are not illustrated. Experience in the UAE suggests that while a proportion of male European Stonechats show a conspicuous white rump, virtually all (at least in fresh to moderately worn plumage) also exhibit variably obvious blackish streaking on the uppertail-coverts. Interestingly, of 16 male


Oscar Campbell

152. Female European Stonechat *Saxicola rubicola*, UAE, December 2006. Whilst most female *rubicola* are straightforward to separate from *maurus*, some of the former may exhibit certain field characters more often associated with the latter. This bird shows a hint of a supercilium, albeit rather diffuse and greyish, and an obviously clean throat that contrasts clearly with the breast band. Some female *S. maurus* show rather diffuse supercilia. However, the throat will abrade to dusky-grey by early spring whilst the saturation of the underparts indicates *rubicola*. In the field this bird exhibited a brownish, warm-tinged rump and uppertail-coverts, both heavily and coarsely streaked.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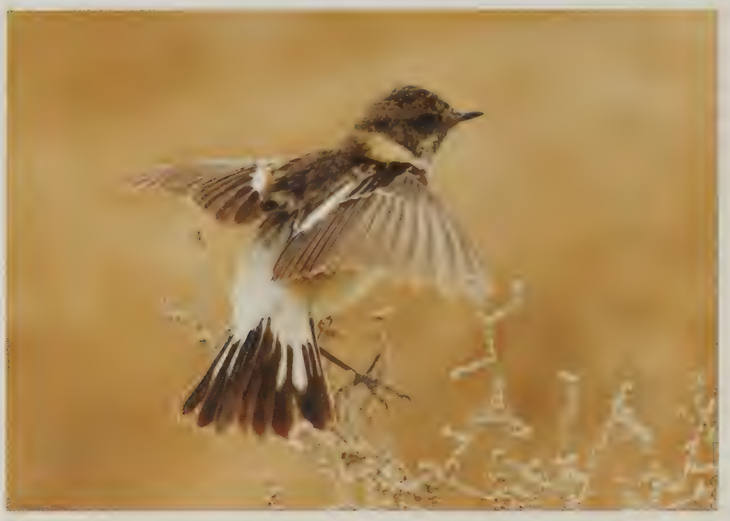
153. Female Siberian Stonechat *Saxicola maurus*, UAE, March 2010. Female *maurus* typically show a characteristically pale supercilium and a clean whitish throat and are, therefore, usually readily identifiable at all times. However, the supercilium is not always as broad and extensive as on this bird and it can appear quite obvious, although greyish, on some female *rubicola*. By March, female *rubicola* would be expected to show an obviously sullied, dusky-washed throat. In this view, the unmarked large orange-buff rump and uppertail-coverts are clearly visible.

European Stonechat specimens from Iran studied by Kirwan & Bates (2008), most had no (or virtually no) white in the rump and were thus easily separable from all subspecies of Siberian.

Which subspecies of Siberian Stonechat occur in the UAE?

Until recently, the general assumption was that the commonest subspecies of Siberian Stonechat occurring in the UAE was nominate *maurus* (see, for example, Pedersen & Aspinall 2010, Aspinall & Porter 2011). The taxonomic status of *armenicus* was unclear, while there were no fully documented records of *variegatus* until February 2008 (although it had undoubtedly occurred prior to that; A. Twyman *in litt.*). Following two records in February and March 2008, *variegatus* has proved a near-annual migrant in early spring, albeit in highly variable numbers. A minor influx in 2011 (four records of five individuals) was followed by a significant influx in 2012 (12 records of 19 individuals), although there was just one record in March 2013 and none in spring 2014. There is only one autumn record of *variegatus* from the UAE and none in winter. Intrigu-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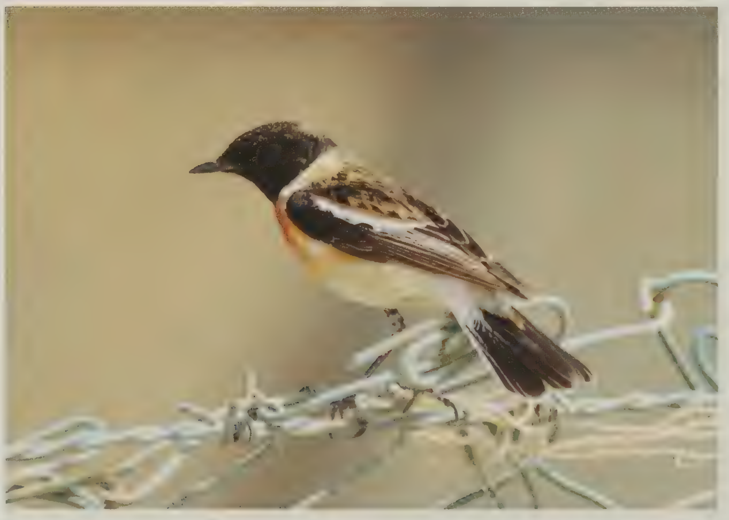
154. Male Siberian Stonechat *Saxicola maurus variegatus*, UAE, March 2011. The most distinctive taxon occurring in the region owing to the wheatear-like tail pattern. On the most exposed rectrices it can be seen that white extends downwards for half to two-thirds the length of the feather on the inner web. However, this pattern is generally invisible when the tail is held closed and it is possible that the extent of white varies geographically (Grant & Small 2004) or with age. The blackish coverts, contrasting with browner remiges, and rather pale-flecked throat and head indicate a 2CY male.

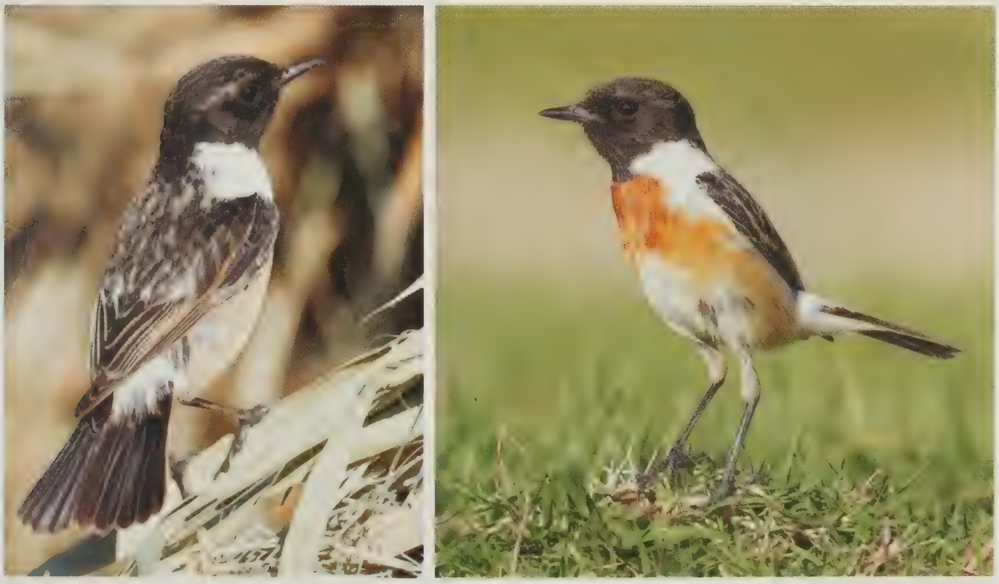

Oscar Campbell

155. Male Siberian Stonechat *Saxicola maurus*, either nominate *maurus* or *S. m. armenicus*, UAE, March 2012. This bird was observed closely by OC and MS over an extended period and many images were obtained. In the field it appeared to show a very limited area of white on the base of at least the outermost rectrices. However, the photographs suggest that this may be due to loose, longer uppertail-coverts cloaking the tail sides (as they obviously do in the centre). Male *armenicus* typically show the basal quarter of the tail feathers to be white (Cramp 1988; Svensson 1992); if this bird does have white at the base of the rectrices, it is significantly less than that. As with *S. m. variegatus*, there is probably some variation in the extent of white on the rectrices of *armenicus*, since the latter intergrades with *maurus* in northeast Iran (Cramp 1988).

ingly, this picture is completely at odds with the pattern from Oman, where there are five records of *variegatus*, all between early November and mid January (Eriksen & Victor 2013). Only one of the Omani records was from the north of the country; the other four were from Dhofar, in the far south.

Since all UAE records of *variegatus* are of males, which are distinctive and easily detected given the pattern of white in the tail feathers, it seems certain that spring females (and possibly some first-winter males in autumn) are being overlooked. For example, of seven Siberian Stonechats observed at Sila'a, UAE, on 10th March 2012, three males were easily identifiable as *variegatus* (a fourth was either *maurus* or *armenicus* – see below), yet none of three females, all seen well, showed any discernible white in the tail in the field, despite Cramp (1988) and Svensson (1992) stating that female *variegatus* usually has lateral tail base buff or cream for 1 cm. For many female *variegatus*, the extent of white in the tail base may be sufficiently restricted that it is invisible in the field; ringing studies, not currently being undertaken, may be necessary to confirm the occurrence of female *variegatus* in the UAE.

One final problem from a UAE perspective is the field separation of *maurus* from *armenicus*. Cramp (1988) and Urquhart & Bowley (2002) suggested that female *armenicus* is indistinguishable in the field from *variegatus* (and hence from *maurus* – see above), but distinguishing male *maurus* from *armenicus* has also proved very difficult. Notwithstanding the general assumption that the majority of birds occurring in the UAE are nominate *maurus*, in the absence of biometric data from trapped birds there is simply no good evidence as to which taxon occurs and their relative abundance. Based on a rather small sample of specimens from the British Museum of Natural History, Urquhart & Bowley (2002) found that, on *armenicus*, the white feather base extended 20–29 mm down each tail feather, equivalent to 39–55% of the total feather length. This would make some *armenicus* difficult to distinguish from *variegatus*. However, Cramp


Mike Barth

Mike Barth

156 & 157. Male European Stonechat *Saxicola rubicola*, UAE, February 2014. This individual is a good example of a European Stonechat that superficially approaches *S. maurus* and could easily be passed off as such. The rather conspicuous pale rump, the lack of obvious streaking to the uppertail-coverts and the large white neck patches are suggestive of *maurus*. However, the underparts are rather extensively deep orange, right across the flanks, while the flanks (and belly) show a diffuse greyish wash; and, despite the appearance of the large white neck sides, the black hind collar is noticeably broad. The uppertail-coverts are obviously worn and frayed but close inspection of additional photographs revealed a few fine, blackish shaft streaks (hidden by the folded primaries in plate 156).

(1988) suggested that only up to 25% of the tail feathers are white basally on male *armenicus*, which would mean that any white will be difficult to detect in the field and thus hamper separation from *maurus*. Furthermore, at least a few *maurus* have some white at the base of the rectrices (up to 10 mm; Cramp 1988), although this is likely to be hidden by overhanging uppertail-coverts. Although individuals exhibiting certain plumage characteristics associated with *armenicus* (a rather concentrated, deep red central breast patch) were noted in the UAE in both 2012 and 2013 (see plate 155), it has proved impossible to eliminate nominate *maurus* – these birds were not trapped, and good-quality digital images failed to confirm any white at the base of the outer rectrices. Although *armenicus* is not currently on the UAE List, it is not inconceivable that it does occur, given that ringing studies in Kuwait indicate its regular presence (and apparently the absence of nominate *maurus*) in that country (A. al-Sirhan *in litt.*) and also confirm how difficult it is to establish the presence of white in the base of the tail feathers in the field. It is hoped that further work will answer these questions in the UAE in due course.

Acknowledgments

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Breeding Golden Plovers in the Peak District National Park

Richard Johnson

European Golden Plover *Pluvialis apricaria*

Abstract Population size and breeding productivity of European Golden Plovers *Pluvialis apricaria* on a study plot at Dove Stone in the English Peak District were surveyed during 2011–13. Two survey techniques were compared. The Golden Plover population increased over the three years, reaching a density of more than ten pairs per km^2 in 2013. Mean productivity over the three years was 1.22 young per pair (or 1.38 young per successful pair). Some effect of weather on the timing of breeding in the three years was suggested and it seems likely that habitat management and restoration is having a positive impact on breeding Golden Plovers.

The European Golden Plover *Pluvialis apricaria* is close to the southernmost limit of its breeding range on the blanket bogs of the Dark Peak, in the north of the Peak District National Park. During 2011–13, a survey to assess the breeding numbers, productivity and phenology of Golden Plovers in this area was carried out.

The 4,000-ha site at Dove Stone is owned by United Utilities (the UK's largest water company), but since 2010 has been managed in partnership with the RSPB. It forms part of the South Pennine Moors Special Area of Conservation/Special Protection Area, designated for its extensive semi-natural moorland habitats and populations of breeding moorland birds. Blanket bog is the dominant habitat, covering some 2,500 ha, within a mosaic of heathland and grassland communities associated with the moorland edge and adjacent steep valleys.

Since 2007, large-scale conservation initiatives have been undertaken, with the long-term aim being to restore a more natural *Sphagnum*-rich blanket-bog community. Work began with United Utilities' Sustainable Catchment Management Programme (SCaMP), together with Environmentally Sensitive Areas schemes, which include reducing grazing intensity (and removing sheep from some areas altogether), followed by a programme of revegetating bare peat and water-table restoration.

Golden Plover populations and breeding ecology

The most recent estimate suggested that 38,000–59,000 pairs of Golden Plovers breed in the UK (Musgrove *et al.* 2013). The population in the Peak District National Park is in the region of 390–420 pairs (Yalden 1974; Carr & Middleton 2004) while that for the Dove Stone area has risen from 43 pairs in 1990 to 77 pairs in 2010 (Brown & Shepherd 1991; RSPB data).

Typically, Golden Plovers first return to the Peak District moorlands in February, sometimes even in January if the weather conditions are good. Some begin displaying at this time but this is usually intermittent and distinctly weather-dependent. It is presumed, although not proven, that these early visitors 'commute' to and from the Cheshire Plain in this early part of the year, until display and territory formation is more intense. By late March and early April, display and territorial behaviour is in full swing.

When the density of breeding birds is high, pairs may be nesting within 200 m of each other. The males make several nest scrapes, showing a preference for hollows near natural markers, and the female chooses the scrape in which to lay her eggs. Females usually incubate through the night while the males feed elsewhere. Males take over the incubation in the early morning and then continue through the day. Off-duty birds usually stay off site except for the time around the change-over, when the eggs are close to hatching and when there are young (*BWP*; Pearce-Higgins & Yalden 2005).

When faced with human intruders, adults on nests employ a variety of strategies. Some sit tight and fly only when the intruder is 3–10 m away. Others fly low from the nest when the intruder is quite some distance away or creep from the nest and then fly away low from the site. Adults may temporarily leave the nest area completely if disturbed during incubation of fairly fresh eggs, but nearer hatching and certainly with young the adults stay close. In the last situation, adults call constantly, encouraging the young to hide while they remain close to the intruder, and sometimes engage in a distraction display (*BWP*; Pearce-Higgins & Yalden 2002).

Survey methodology

The study plot, a fairly level area of blanket bog lying 500 m or more above sea level and approximately 2 km² in extent, was visited weekly for ten weeks. Visits began in late April or early May when most Golden Plovers were already incubating, and days with inclement weather (rain and strong winds) were avoided. On each visit, all sightings were mapped and behaviour recorded.

The first few visits typically gave no indication of population size, with incubating birds often sitting tight and off-duty birds feeding elsewhere. However, towards the end of incubation, off-duty birds spent more time on guard and the moor steadily became alive with calling plovers. Small young are wonderfully camouflaged and were rarely seen during the surveys, but on fledging the young were more conspicuous, with their bright, clean golden plumage; they were monitored and linked to a particular pair where possible. When the chicks are newly fledged, the adults stay close to them but after a week or so the young rapidly become more independent.

For comparison with the more detailed survey work described above, a standard, three-visit, transect-based moorland bird survey was also carried out in the study area, with transect routes 200 m apart walked on each of the three visits.

Results

In 2011, 11 pairs/territories were identified by 19th May, when the eggs were probably close to hatching. One further territory was identified subsequently, although the eggs failed to hatch. By 30th May, nine pairs had young, and the oldest chicks were becoming more mobile. Three pairs were apparently still incubating, most likely replacement clutches. By 20th June the first young were already at the early flying stage. All 11 successful pairs were still in the survey area on 27th June; this decreased to 3–4 pairs by 5th July and to two pairs by 11th July on the final visit.

In 2012, 17 territories were located, from which three pairs failed to rear young to fledging. On 6th June the first fledged young were located on three territories. The eighth visit, on 18th June, found six broods of fledged young and by 11th July most young had left the moor. As in 2011, for most pairs we recorded 1–2 fledged young; only one pair fledged a brood of three.

In 2013, following very cold conditions during March, some 25 territories were eventually located, and only two of those pairs failed to raise young. The first broods of fledged young were recorded on 24th June, which gave us an estimate of 23rd April when the first egg was laid. On 8th July, 12 fledged broods (28 young in total) were found but a week later most of the young and adults had left the moor. Again, most pairs had 1–2 fledged young but at least one pair fledged three.

A summary of the productivity results are given in table 1. The increase in the breeding population over the three years is notable, with high hatching success in each year. Over the three seasons, the mean hatching success was 89%, although this included some replacement clutches, while the mean number of fledged young was 1.22 per pair, and 1.38 young per successful pair.

Comparison of survey methods

The two survey methodologies (the ten-visit productivity survey and the three-visit moorland bird survey) gave very similar results until 2013, when breeding density increased and it became more difficult to assign birds to different territories using the standard transect methodology. In that year, the ten-visit survey showed 25 pairs whereas the three-year survey revealed a total of only 18, almost a third lower (fig. 1).

Breeding productivity and timing related to weather

Table 1 also shows three key meteorological variables measured at the nearby Sheffield Weather Station (mean March temperature, plus the temperature and rainfall for one month during the post-hatching period). These are compared with the 30-year average (1981–2010), using data from Sheffield Weather Station. In summary, 2011 was quite close to the average, in terms of both temperature and rainfall, while 2012 showed a warm early spring and a wet early summer, and 2013 had a cold early spring and a dry summer.

Table 1. Summary of breeding performance and timing. Data on climate show difference from long-term mean temperature/rainfall at Sheffield Weather Station, 1981–2010. So, for example, mean March temperature in 2011 was 0.65°C above the 30-year mean.

year	no. pairs	no. hatching (%)	mean first-egg date	mean hatch date	mean fledging date	min no. fledged	mean fledged young/ successful pair	mean fledged young/ total pair	mean March temperature	mean temperature, post-hatching period	mean rainfall, post-hatching period
2011	12	11 (92%)	21st April	27th May	21st June	15	1.36	1.25	+0.65°C	+0.8°C	66%
2012	17	14 (82%)	14th April	20th May	14th June	23	1.64	1.35	+2.65°C	+0.2°C	165%
2013	25	23 (92%)	1st May	6th June	1st July	28	1.22	1.12	-4.20°C	+0.1°C	0.5%

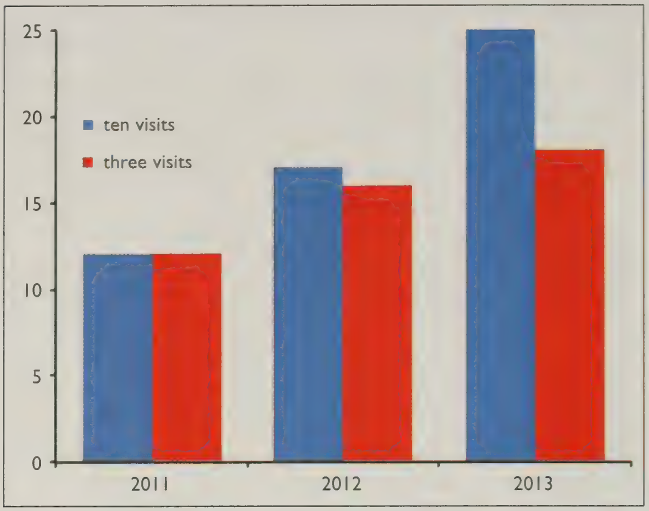

Fig. 1. Number of pairs of Golden Plovers *Pluvialis apricaria* found in 2011–13 by the two survey methodologies, using ten and three visits respectively (see text for more detail).

Although based on only three years' work, our data suggest a link between weather conditions in early spring and the timing of breeding, with a difference of over two weeks in mean first-egg date between 2013, with a relatively cold March, and 2012, when March was considerably warmer. Similarly, our findings suggest that fledging rates are higher in years when birds lay earlier, which is consistent with previous work (Pearce-Higgins & Yalden 2002). Temperatures in the post-hatching period were similar in all three of our survey years, but the best fledging rate was in 2012, by far the wettest year.

Discussion

Habitat change

Two key factors may have affected the population levels of Golden Plovers during the study period: the revegetation of bare peat and water-table restoration. Around one-fifth of the 2-km² study area was treated and reseeded with grass seed and heather brash as part of the SCaMP initiative and as a consequence previously bare areas are to a large extent now vegetated. The treatment also involved lime and fertiliser application to raise pH and allow the nurse crop of grass seed to establish. Bryophytes also benefited, and the treatment was successful in encouraging the establishment of cottongrasses *Eriophorum* and Heather *Calluna vulgaris*. Another factor is water-table restoration; blocking erosion gullies by using stone and heather bales has been carried out over more than half of the productivity study area (plate 158). Although still localised, *Sphagnum* mosses are recolonising and being reintroduced, and it is hoped will eventually re-create areas of active blanket bogs. During the study period a large flat area north of Chew Reservoir became much wetter as a result of gully blocking, which provided an improved feeding habitat for both adult and young Golden Plovers (plate 159).

Geoff Carr

158. Heather bales used to block erosion gullies at Dove Stone, April 2011.

Geoff Carr

159. Part of the survey area looking south to Chew Reservoir, May 2011 – heather bales have been used in this area to raise the water table (see plate 158).

Hatching success and fledging productivity

Compared with previous work on Golden Plovers in the Peak District, our results show higher hatching success but broadly similar chick survival rates, in turn meaning that overall, productivity in our study was higher (1.22 fledglings per pair, compared to 0.57 in the late 1990s; Yalden & Pearce-Higgins 1997). If we assume similar population dynamics and adult survival, our recorded productivity is broadly in line with the observed population increase – productivity of 0.57 in the 1990s supported a stable population, while the 1.22 in our study was associated with population growth.

Previous studies show some differences in chick mortality, from the 2.2 young fledged per successful nest of Ratcliffe (1976) to 1.66 (Parr 1980) and 1.22 (Pearce-Higgins & Yalden 2002) Our three-year average was 1.38 chicks from 48 successful nests (range 1.22–1.64). Was our relatively low chick survival due to predation, exposure or starvation, or a combination of all three? As with all ground-nesting species, avian and mammalian predation can have an important effect on Golden Plover productivity. Foxes *Vulpes vulpes* are not controlled across the blanket bog at Dove Stone and scat surveys (four separate 1-km transects were checked monthly for scats between March and May) adjacent to the site found low numbers of scats; although they were widespread in March, counts dropped sharply in April and were almost non-existent in May. Most of the Fox scats found had remains of voles and Mountain Hares *Lepus timidus*; only one scat showed bird remains, which appeared to be of a thrush *Turdus*. During the study period there was just one observation of a Stoat *Mustela erminea*. Peregrine Falcons *Falco peregrinus* are observed hunting over Dove Stone from nearby nests, Common Ravens *Corvus corax* are seen regularly and there were occasional sightings of Carrion Crows *C. corone*. Each of these species may predate Golden Plover eggs, young or adults, although during the whole of the study period there was no evidence for it other than an adult bird killed by a Peregrine. Nonetheless, the scat data combined with low rates of nest (egg) predation perhaps point to weather/food availability being the main driver of chick mortality.

Is there any evidence of a potential link between weather conditions and food supply? Pearce-Higgins *et al.* (2005) stressed the importance of tipulid abundance in Golden Plover chick survival and flagged the potential effect of climate change on a divergence in mean hatch dates and mean tipulid emergence dates, which could have a serious negative impact on Golden Plovers. Tipulid emergence is linked to May temperature, with a long-term mean emergence date of 24th May (Pearce-Higgins *et al.* 2005). Our hatch date varied from 20th May to 6th June in 2013, and it seems plausible that the low

Geoff Carr

160. Two typical European Golden Plover *Pluvialis apricaria* nest sites on Dove Stone, one in cottongrass *Eriophorum*, the other in broken ground, May 2012.

productivity we observed in 2013 could be linked to the late mean chick hatch date and a mismatch with the main insect emergence.

In summary, this three-year survey provided good evidence of relatively high hatching success and productivity levels consistent with an increasing Golden Plover population on an area of degraded blanket bog under conservation restoration management. The results appear to support the idea that restoration of a higher water table can contribute to the conservation of the typical waders of blanket bog. The results suggest that the impact of predation was low during the egg stage, and that chick survival rates, like those in other studies on blanket bog, were low, and this is perhaps linked to chick mortality in the early stages after hatching.

Acknowledgments

We should like to thank Simon Wightman for helping to design the study and Kate Hanley, Dove Stone Site Warden, for carrying out the standard Moorland Bird Survey transects. Grant aid from the Grantscapes Landfill Tax Credit Scheme supported the Dove Stone wader monitoring work.

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Ageing criteria for the Black-browed Albatross

Abstract The basics of moult, wear, plumage and bill colour are described and illustrated for the Black-browed Albatross *Thalassarche melanophris*. Ageing criteria are presented for birds up to six years old, after which the majority cannot be aged accurately.

The Black-browed Albatross *Thalassarche melanophris* may be aged by analysing three main characteristics: moult (including the effects of wear), plumage and bill colour. Despite some variation, these characteristics should, in combination, allow most immatures to be aged, assuming good views and/or reasonable photographs. The separation of immature Black-browed from other immature albatrosses will be covered in depth in Flood & Fisher (in press), from which the illustrations here are taken.

Moult and wear

The Black-browed Albatross moults in cycles. The adults follow an annual cycle, related to breeding activity, while immatures synchronise the timing of their moult cycles with adults by about the fifth cycle; before that they follow an annual cycle only approximately.

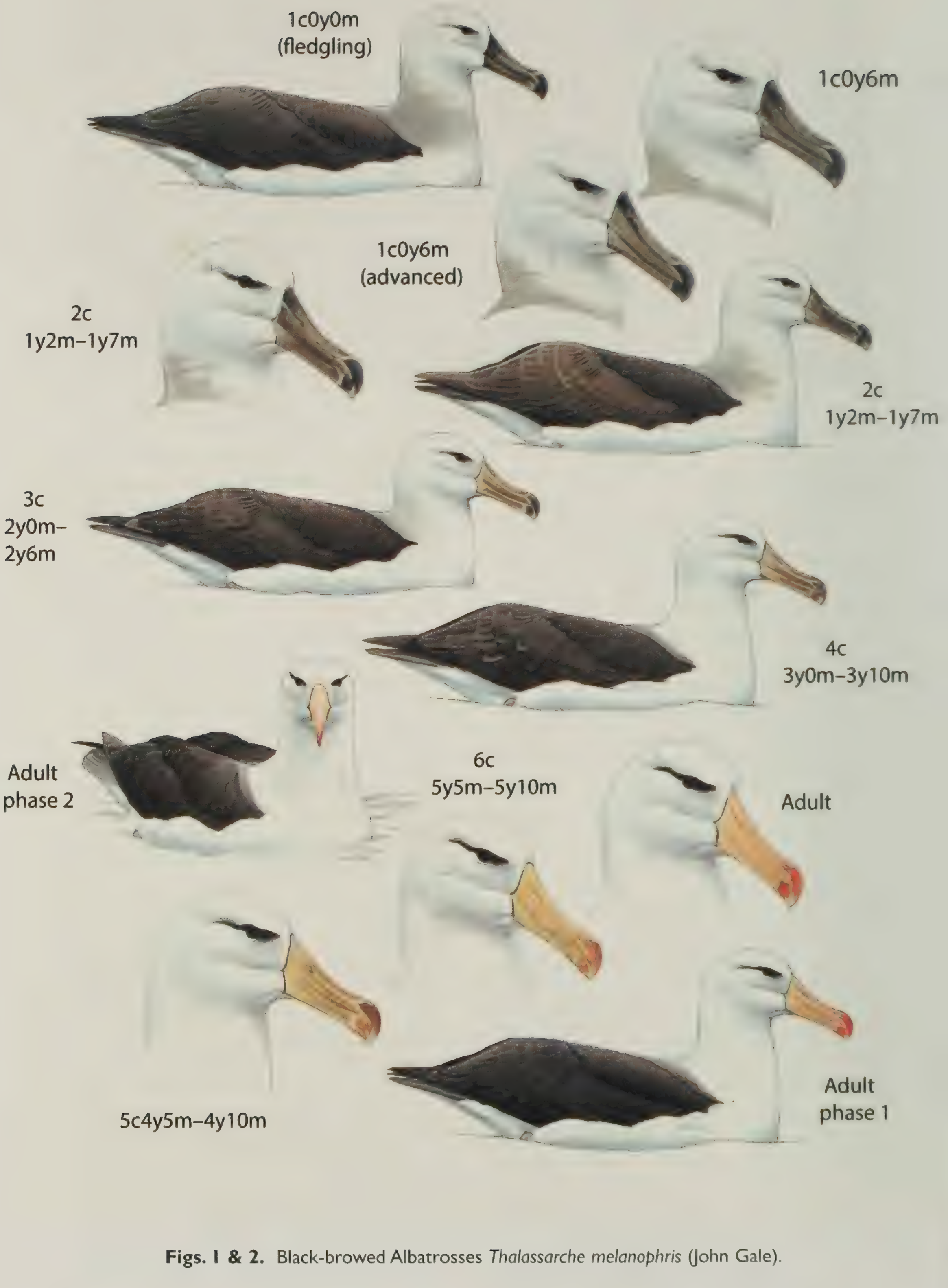
The first moult cycle involves a complete moult in the nest, producing juvenile plumage. There may be limited head and body moult subsequently but in the first nine months after fledging virtually all feathers are of the same generation, and appear uniform. The second cycle, and all subsequent cycles, involves moult of head, body and tail feathers. Following the second moult, fresh head, body and tail feathers contrast with the browner (worn and bleached) upperwings. The third cycle, and all subsequent cycles, involves wing moult. The pattern of primary moult in P5–P10 (primaries numbered descendantly, i.e. P10 is the outermost) is critical for ageing. The third, fifth and seventh moults include the renewal of P8–P10 (phase 1 primary moult), but not P5–P7, which are replaced in the fourth and sixth moults (phase 2 primary moult). Hence, from the third moult onwards, moult contrast is evident between P5–P7 and P8–P10. Note, however, that outer primaries abrade more quickly than inner primaries of the same generation and can potentially be mistaken for those of an older generation. There is some variation in primary moult (Prince & Rodwell 1994; P. Ryan *in litt.*), for example P7 may be moulted along with P8–P10, but the general pattern described holds good. Secondary moult is complex and less important in terms of ageing. Notably, however, in the fourth cycle the trailing edge of the secondaries is irregular, owing to large block(s) of the remaining, heavily worn, juvenile feathers. See also Howell (2010).

Moult studies of Black-browed Albatross have taken place in the southern hemisphere. The switching of moult timing may occur in birds that enter another hemisphere (Howell 2012). This is presumably unlikely with a recently arrived immature, but may happen in a stranded adult with an adapted northern-hemisphere life-cycle (for example birds taking up residence in a colony of Northern Gannets *Morus bassanus*).

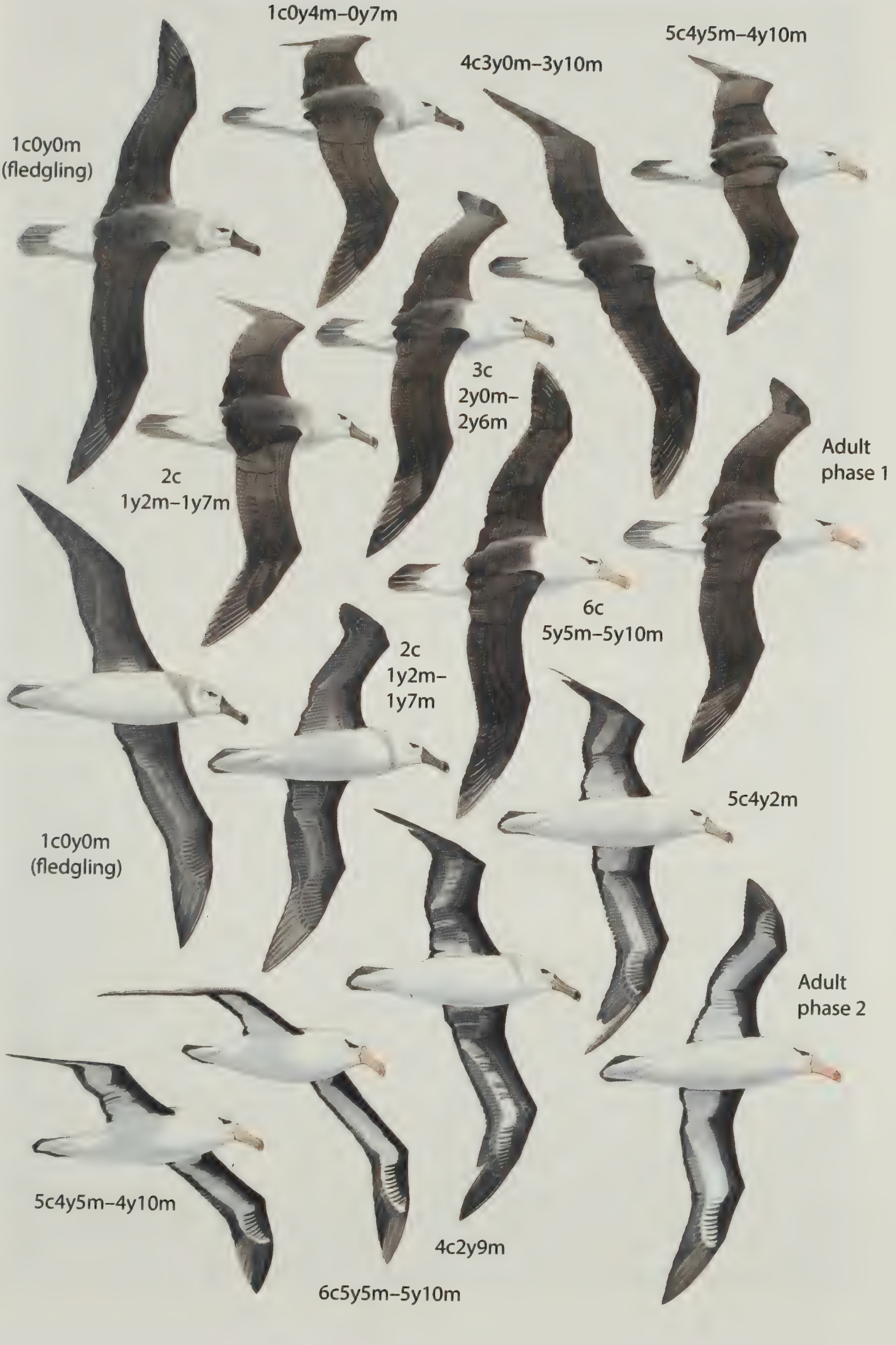
Plumage and bill colour

The general progression of plumage and bill colour (from juvenile to adult plumage, attained in most birds in the seventh cycle) is covered in field guides, but linked to ageing criteria in, for example, Prince & Rodwell (1994) and Bugoni & Furness (2009). The most helpful features are markings on the head and neck, the extent of white in the underwing-coverts, and bill colour and pattern. The head and neck progress from white with extensive smudgy markings and small dark eye patches, to white with distinct black eyebrows; the underwings develop from mainly dark, to having a large white central panel in the coverts; and the bill from dark olive-brown with blackish ungues (the plates that cover the bill tip) to rich orange-yellow with bright rosy ungues.

These features are less reliable for ageing than moult patterns. For example, on South Georgia, overlap in bill colour and pattern is



Figs. 1 & 2. Black-browed Albatrosses *Thalassarche melanophris* (John Gale).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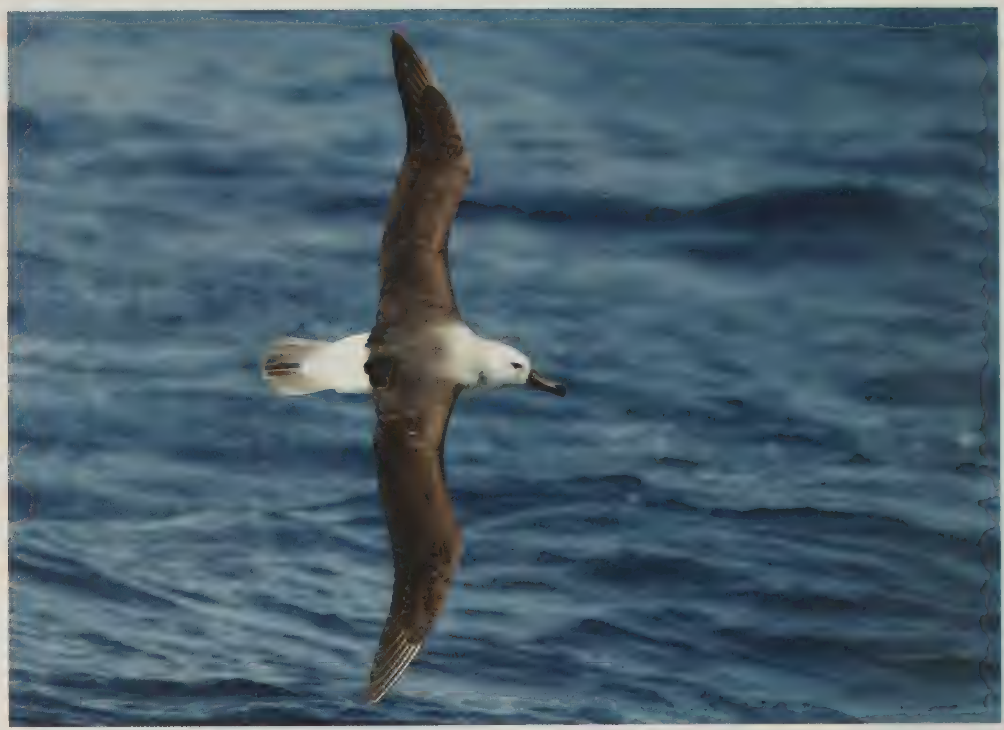
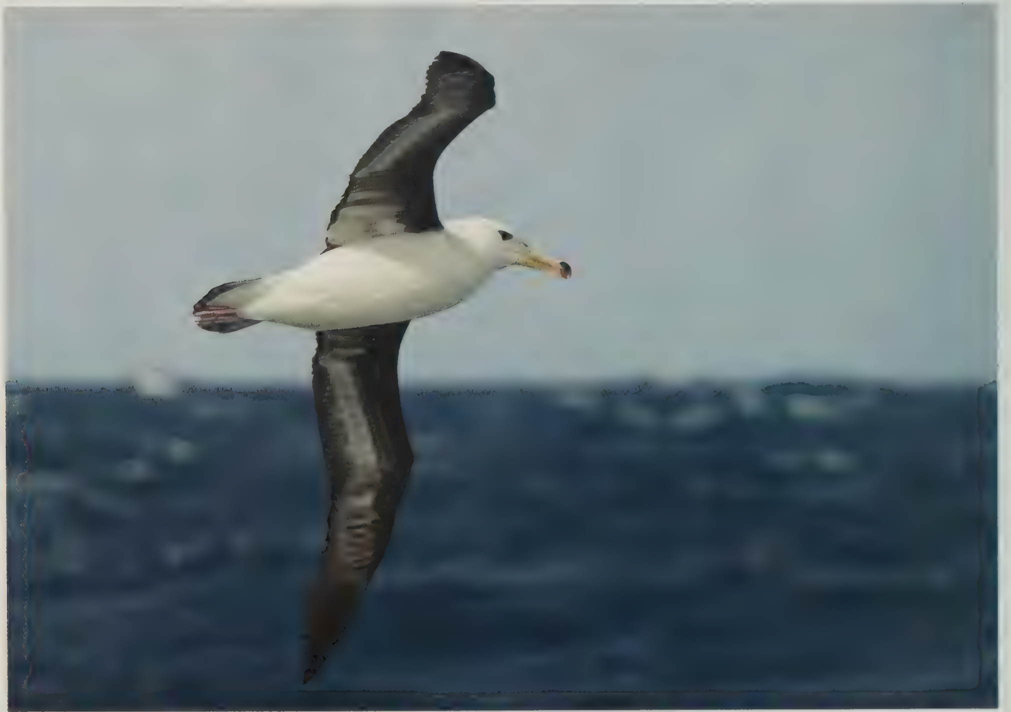
5c4y5m–4y10m
4c3y0m–3y10m
1c0y0m
(fledgling)
3c
2y0m–
2y6m
Adult
phase 1
2c
1y2m–1y7m
6c
5y5m–5y10m
2c
1y2m–
1y7m
5c4y2m
1c0y0m
(fledgling)
Adult
phase 2
5c4y5m–4y10m
4c2y9m
6c5y5m–5y10m



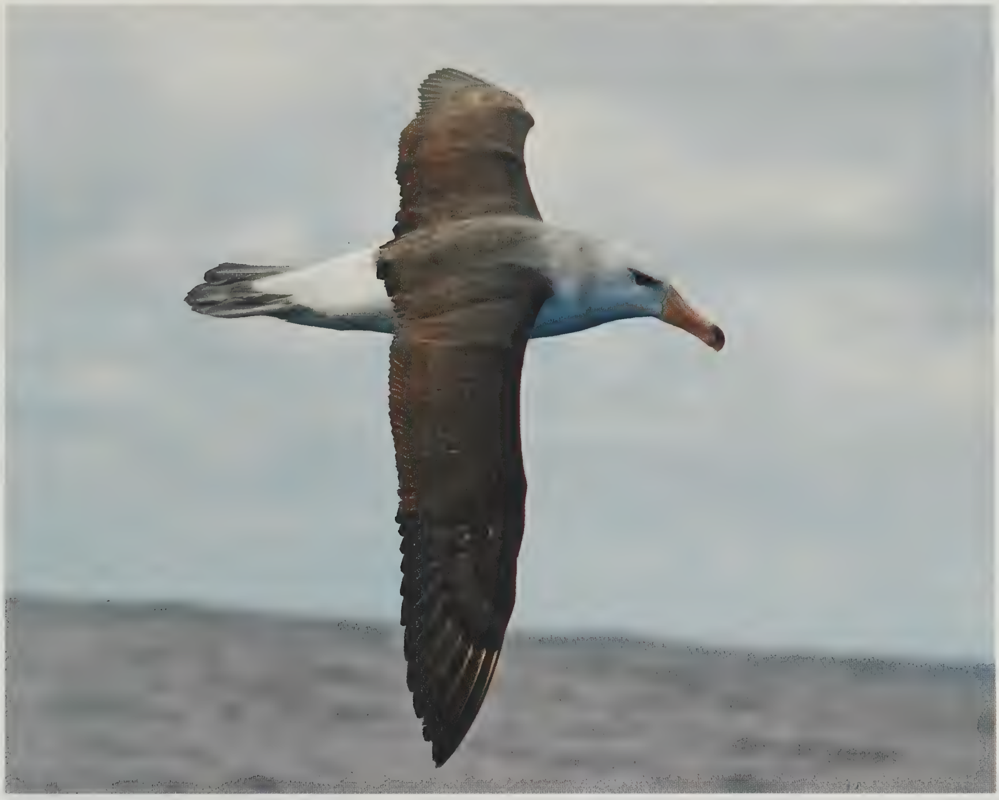
Peter Ryan

161. Black-browed Albatross (2c1y6m), southeast Atlantic, 11th November 2007. Unique to the second cycle, note fresh blackish-grey back, scapulars and rectrices contrasting with bleached brownish juvenile upperwings, and frayed outer primary tips.



Kirk Zufelt

162. Black-browed Albatross (3c1y11m), southwest Atlantic, 23rd April 2012. This immature has fresh P8–P10 in strong contrast with juvenile P5–P7 and could be 3c or 5c. However, the strong rather than moderate moult contrast in the primaries, largely blackish ungues, and heavily fingered white median panel in the underwings age this bird as a young immature in its 3c.



163. Black-browed Albatross (4c3y2m), southeast Indian Ocean, 20th July 2008. This immature bird has fresh P5–P7 in moderate contrast with P8–P10 and could be 4c or 6c. However, many heavily worn juvenile secondaries, vestiges of immaturity on the hindneck, greyish saddle over the base of the bill, and largely dark-grey ungues age this bird as a young immature in its 4c.

found among some birds with a one- (or exceptionally two-) year difference in age (Prince & Rodwell 1994), while evidence suggests faster progression of bill colour and pattern in young birds from the Falkland Islands than birds from South Georgia of a similar age (Bugoni & Furness 2009).

Recording age

We follow the convention that fledging occurs on 1st May, when a bird is given the age 0 years and 0 months old (Prince & Rodwell 1994). We record age in terms of which moult cycle the bird is in, and the bird's age since fledging in years and months. For example, the age of a bird in November of the first moult cycle is written 1c0y6m (c is cycle, y is years, m is months), September of the second moult cycle is written 2c1y4m, and so on. This adds greater precision and overcomes potential confusion, for example by showing how a bird in its third cycle can be in its second year since fledging (e.g. 3c1y8m in January of the third cycle).

Ageing criteria

The following criteria use the median results from ageing studies (Prince *et al.* 1993, Prince & Rodwell 1994, Bugoni & Furness 2009). Fresh remiges are blackish-grey but become increasingly browner and paler with age. Note that primaries and respective greater coverts moult at the same time. The bill is made up of a number of plates, but we refer simply to the main plates and to the ungues since these two parts of the bill are contrastingly coloured.

First cycle

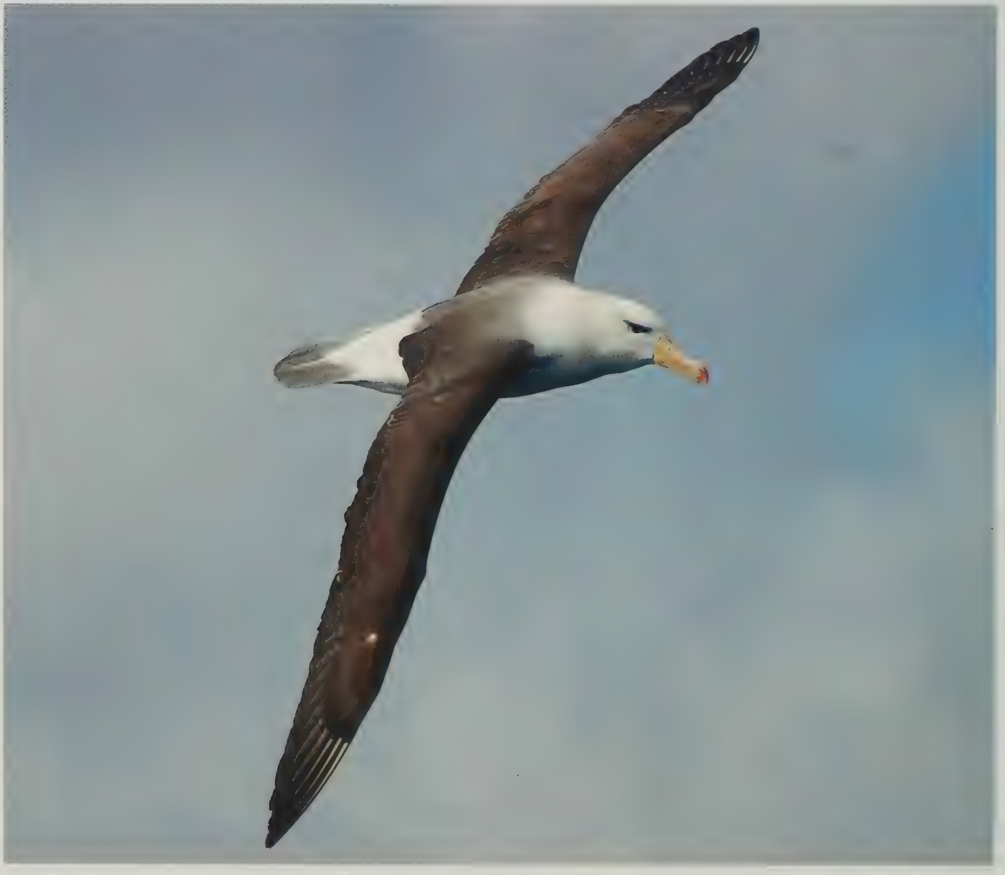
Moult/wear Moult in the nest produces juvenile plumage. Birds fledge with uniformly fresh plumage, although rectrices for example may show some damage from the nest. Dark upperside feathers slowly bleach browner with age, but there is no moult contrast. Some birds may have limited head and body moult that could be the start of a protracted second moult (Howell 2012). *Head and neck* Variable greyish on fledging, but typically whitish face, chin, and upper throat, smudgy mid-grey over the rest of the head and lower throat. This quickly fades leaving a white head, mid-grey hindneck shawl, and complete narrowish neck collar. Small dark eye patch, mainly in front of the eye. *Underwings* These typically look wholly dark in the field, but close views reveal blackish leading (marginal and some lesser coverts) and trailing edges (exposed remiges) with remaining coverts somewhat paler. *Bill* Dark brownish-olive with a blackish saddle over base, ungues blackish. Main plates largely dusky pinkish-yellow on advanced birds, similar to second cycle.

Second cycle

Moult/wear January–October. Moult of head, body and rectrices should be evident by May/June. Upperwings juvenile, variably bleached browner, contrasting with fresh blackish-grey back, scapulars and rectrices, with outer primary tips heavily frayed. *Head and neck* Reduced grey hindneck shawl, neck collar may be broken at throat. Small dark eye patch mainly in front of eye. *Underwings* Little change from first cycle. *Bill* Dark olive-brown, dark-grey saddle over base, with some dusky pinkish-yellow on main plates. Ungues blackish, most with a pale tip. Some more like third cycle.

Third cycle

Moult/wear January–October. Moult of P8–P10 (Jan–Apr) gives strong contrast with juvenile P5–P7. Some inner secondaries moulted, thus contrasting with remaining juvenile secondaries. *Head and neck* Hindneck shawl and neck collar further reduced.



Alan Collins

164. Black-browed Albatross (6c5y2m), southeast Indian Ocean, 20th July 2008. Like the bird in plate 163, this immature bird has fresh P5–P7 in moderate contrast with P8–10 and could be 4c or 6c. However, only two generations of secondaries, near-adult head and neck, orangey-yellow bill and rosy ungues with faint grey vestiges age this bird as an immature in its 6c.

Small dark eye patch with better defined (but short) eyebrow. *Underwings* Develop variable though notable whitish median panel with many blackish 'fingers' in both arms and hands. *Bill* Dusky pinkish-yellow, mid-grey saddle over base, smudgy greyish on main plates. Ungues blackish or dark grey, some with reddish hints, and a pale tip. Some more like second or fourth cycle.

Fourth cycle

Moult/wear December–October. Moult of P5–P7 (Dec–Apr; see Flood 2014) gives moderate contrast with third-cycle P8–P10. Primary shafts of P8–P10 bleached whitish. Secondary moult is variable within a general pattern but an irregular trailing edge to the arms is typical of this age and results from heavily worn juvenile secondaries. *Head and neck* Mainly white, dark eye patch larger and a dark eyebrow extends somewhat behind eye. *Underwings* As adult, but dark leading edge broader, and many more blackish fingers in the central panel, mainly in the hands. *Bill* Dusky orangey-yellowish, greyish saddle over base, some smudgy greyish on main plates. Ungues dark grey, but usually show some reddish and a pale tip. Some more like third or fifth cycle.

Fifth cycle

Moult/wear April–September. Moult P8–P10 (Apr–Aug/Sep) giving moderate contrast with fourth cycle P5–P7. Secondary moult not important to ageing from fifth cycle onwards. *Head and neck* As adult, but eye patch and eyebrow not as fully developed and neat. *Underwings* As adult, but more blackish fingers across central panel, mainly in the hands. *Bill* Orangey-yellow, vestiges of greyish saddle over base and greyish on main plates. Ungues reddish/rosy with grey vestiges and pale tip. Some more like fourth or sixth cycle.

Sixth cycle

Moult/wear April–September. Moult P5–P7 (Apr–Aug/Sep) giving moderate contrast with fifth-cycle P8–P10. *Head and neck* Near adult. *Underwings* As adult, but may have more blackish fingers, mainly in the hands. *Bill* Orangey-yellow, with faint grey vestiges, ungues rosy with faint grey vestiges and pale tip. Some more like fifth or seventh cycle.

Seventh cycle

Moult/wear April–September. Moult P8–P10 (Apr–Aug/Sep) giving moderate contrast with sixth-cycle P5–P7. *Head and neck* White with neat and thick eyebrow in front of eye, meeting patch of dark smudgy feathers; eyebrow long and narrower behind eye. *Underwings* Thick dark leading and fairly thick trailing edge, dark wing-tips, large white central panel of larger coverts and axillaries. Blackish fingers extend into hand. *Bill* Rich orangey-yellow, ungues bright rosy with a pale tip. About 5% of birds in their sixth cycle and 1% of birds in their seventh cycle have faint grey vestiges on the bill (Prince & Rodwell 1994).

Acknowledgments

For reading and commenting on a draft of this article, thanks to Steve N. G. Howell. For helpful communications about moult in the Black-browed Albatross, thanks to Leandro Bugoni and Peter Ryan.

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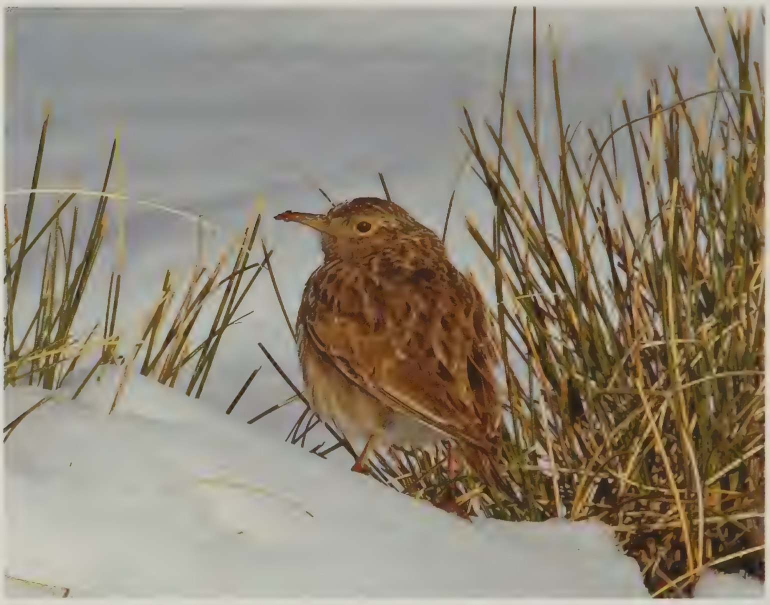
Photospot

The occurrence of Dupont's Lark in lying snow

During a visit to the high desert areas of eastern Morocco, near Zeida, on 21st February 2015, we found the area under a thick cover of snow (plate 166). At this reliable site we also found the resident Dupont's Lark *Chersophilus duponti*, but the behaviour of the two birds we saw was not characteristic. The pair we located had sought refuge in an area of grass tussocks. Presumably because of the low temperatures, the birds were rather sluggish and were also silent throughout the visit; and as a result of the snow, we saw them make several short flights rather than running across the ground, which is normally so characteristic. Clearly, however, this species is well able to adapt to adverse conditions without moving out of its favoured areas.


Peter Maton

165. Dupont's Lark *Chersophilus duponti*, Zeida, Morocco, February 2015.

Alan Parker

166. The high desert plains near Zeida, Morocco, on 21st February 2015.

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Rarities Committee news

BBRC appoints a new chairman

After his term as a voting member of BBRC from 1999, Adam Rowlands took on the role of the Committee's chairman in April 2008, and served until his retirement at the AGM in March this year. We can now announce that Paul French, who has been a BBRC member since 2008, has accepted the post of chairman.

Taking on the role of MC at the handover (see plate 113 in the last issue of *BB*), BBRC Secretary Nigel Hudson related how Adam had played such an important part in making his own leap into being the Committee's secretary so easy and, just as importantly, so enjoyable. Nigel noted that, throughout his time with BBRC, Adam had displayed a quiet but authoritative demeanour, which meant that you always listened as he explained the problem and, more often than not, the solution. That quiet authority was even more in evidence when Adam became chairman, and it was combined with a phenomenal memory of BBRC's recent history. That in turn meant that Adam was usually able to recall something along the lines 'and there was that first-winter in Norfolk in 1997 that also showed dark tips...', etc. etc. to ensure that consistency was applied. In reply, Adam emphasised what a pleasure it had been to serve on the Committee, both as a voting member and as chairman. Everyone involved with BBRC wished him well for the future, which will include still helping BBRC on specific projects.

Nigel Hudson

167. Paul French at the BBRC AGM in March 2015.

Replacing Adam is another fresh-faced and highly talented member of the current Committee, Paul French. Originally from Wolverhampton, Paul is a self-employed ornithological consultant, now based in the East Riding of Yorkshire, but often to be found in the extremities of Britain at migration time. Sickeningly well travelled and highly experienced in identification matters, he will bring a variety of talents to the post of chairman, not least his apparently inexhaustible enthusiasm. For the time being at least, Paul will continue as a voting member of BBRC as well as taking on the chair's duties.

New member for BBRC

We are sad to report that Martin Garner, who has been a voting member of the Committee since 2006, has announced his early retirement from BBRC. A combination of ill health and a desire to publish more in his *Challenge* series of bird books has led to this difficult decision for him. Everyone at BBRC would like to express their sincere thanks and appreciation to Martin for all the knowledge, insight, dedication and hard work he brought to the Committee. His sense of humour and his boundless enthusiasm, for obscure subspecies, for learning and everything else, will be sorely missed.

We are delighted to announce that David Fairhurst has agreed to be co-opted onto the Committee to replace Martin, with effect from the AGM in March. Dave is the current

RSPB South Suffolk Coast warden and a serving member of the Suffolk records committee. He will be familiar to many for his numerous rarity finds, including Brown Shrike *Lanius cristatus*, Pallas's Grasshopper Warbler *Locustella certhiola*, Thick-billed Warbler *Iduna aedon* and Yellow-breasted Bunting *Emberiza aureola* on Shetland, plus Suffolk's first Laughing Gull *Larus atricilla* and fourth Red-eyed Vireo *Vireo olivaceus*, along with Pacific Golden Plover *Pluvialis fulva*, Baird's Sandpiper *Calidris bairdii*, Lesser Yellowlegs *Tringa flavipes*, Two-barred Crossbill *Loxia leucoptera* and plenty more in his home county. He has extensive foreign experience to boot, including in much of Europe, the USA and Israel, and in his spare time he is a tour leader for Limosa and Shetland Wildlife.

Dave will be co-opted until August 2015, when an election for the vacancy left by Martin's retirement will take place. David Fairhurst will be the BBRC nominee, but we welcome further nominations. Anyone wishing to stand for election should fulfil the following criteria:

- a widely acknowledged expertise in identification
- proven reliability in the field
- a track record of high-quality submissions of descriptions of scarce and rare birds to county records committees and the BBRC
- considerable experience of record assessment
- regional credibility
- easy access to IT
- the capacity to handle the considerable volume of work involved in assessing upwards of 700 records per year
- the capacity to work quickly and efficiently

All candidates must be proposed and seconded; nominations (with a letter of agreement from the candidate) should be sent to the BBRC chairman by 15th July 2015. After this date, if we have received further nominations, a voting slip and list of candidates with relevant details will be sent to all county recorders and bird observatory wardens for an election, as per section 2.2.4 of our constitution (see www.bbrc.org.uk/constitution.pdf).

Out with the old and in with the... old

As noted briefly in the last issue of *BB* (p. 189), there are a number of changes to the BBRC list, which take effect from 1st January 2015. Removed from the list are Lesser Scaup *Aythya affinis*, Penduline Tit *Remiz pendulinus*, Blyth's Reed Warbler *Acrocephalus dumetorum* and Citrine Wagtail *Motacilla citreola*, while added to it are Aquatic Warbler *Acrocephalus paludicola*, Tawny Pipit *Anthus campestris*, Red-throated Pipit *A. cervinus* and Rustic Bunting *Emberiza rustica*. Hopefully, those birders lucky enough to have found a Lesser Scaup in the early part of 2015 will not be too disappointed by this announcement; we will, of course, consider those Lesser Scaups that were initially found in 2014 but stayed into 2015.

The starting point for defining a national rarity has been updated as follows: either 100 or fewer individuals in the most recent ten-year period, or ten or fewer individuals in at least seven of the last ten years. Any taxon that meets, or is close to, either of these criteria will then be *considered* for inclusion as a BBRC rarity. The removal of taxa from the BBRC list will follow similar guidelines – so

Table 1. Annual totals for the most recent ten-year period (2004–13) of the four species to be removed from the BBRC list. The figures are in numerical rather than chronological order, so the biggest year is listed under 1st, the next best under 2nd, and so on.

	10th	9th	8th	7th	6th	5th	4th	3rd	2nd	1st	Total
Lesser Scaup	2	4	6	8	10	14	15	15	16	27	117
Penduline Tit	5	7	7	7	9	11	13	13	15	19	106
Blyth's Reed Warbler	2	3	4	6	7	11	13	16	19	20	101
Citrine Wagtail	4	7	9	11	12	14	19	20	21	21	138

those with more than 100 individuals in the last ten years, or more than ten individuals in at least seven of the last ten years will be *considered* for removal.

Before finalising any changes, the Committee will also consider other factors, such as population trends, changes in distribution, and identification issues with taxa that are hovering close to the threshold; in other words, the statistical criteria should be treated as guidelines rather than hard and fast rules. We also propose that decisions about species coming on or off the list will then remain in place for at least ten years, to try and smooth out any short-term fluctuations and to avoid a situation where species 'yo-yo' on and off the list.

Ultimately, we hope that the guidelines presented here will prove stable and robust over the coming years.

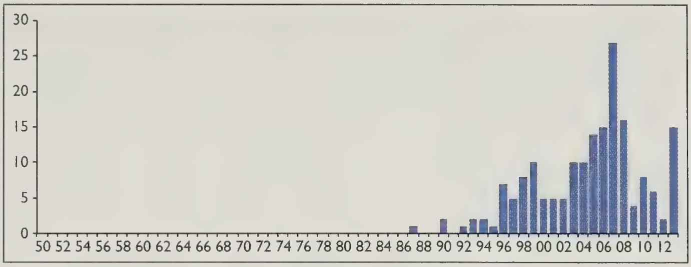

Fig. 1. Annual totals of Lesser Scaups *Aythya affinis* in Britain since 1950.

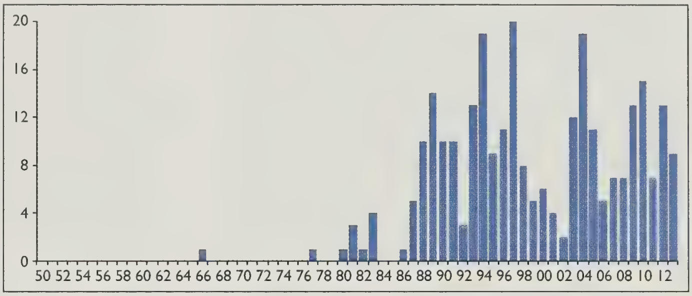

Fig. 2. Annual totals of Penduline Tits *Remiz pendulinus* in Britain since 1950.

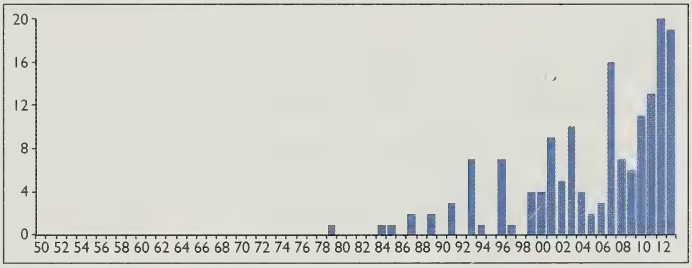

Fig. 3. Annual totals of Blyth's Reed Warblers *Acrocephalus dumetorum* in Britain since 1950.

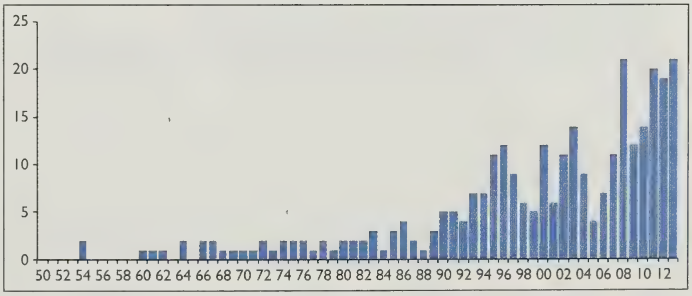

Fig. 4. Annual totals of Citrine Wagtails *Motacilla citreola* in Britain since 1950.

Given that the first British record of Lesser Scaup occurred as recently as 1987 – the famous Chasewater (Staffordshire) bird – it may be initially surprising that this Nearctic duck is no longer a national rarity. The true status is perhaps masked by returning birds, but the trend is pretty clear, even allowing for a slight decline in the breeding population www.birdlife.org/datazone/speciesfactsheet.php?id=483
With a total of 117 records in Britain in the last ten years, it clearly exceeds the 'more than 100 in ten years' criterion.

Although there are only five years with more than ten records of Penduline Tit, the total of 106 over the same period is sufficient to warrant removal from the BBRC list. This species is the only one treated here that remains a real rarity in the north of Britain – indeed, there are no accepted Scottish records to date. Numbers do fluctuate, but seem to be smoothing out just above the ten-per-year mark.

Table 2. Annual totals for the most recent ten year period (2004–13) of the four species that return to the BBRC list. The figures are in numerical rather than chronological order, so the biggest year is listed under 1st, the next best under 2nd, and so on.

	10th	9th	8th	7th	6th	5th	4th	3rd	2nd	1st	Total
Aquatic Warbler	3	7	7	7	8	9	9	12	17	17	96
Tawny Pipit	0	6	6	7	10	11	11	14	15	15	95
Red-throated Pipit	4	4	6	8	11	11	12	12	15	19	102
Rustic Bunting	5	5	5	6	6	7	8	10	13	15	80

As noted in the last BBRC report (*Brit. Birds* 107: 626–627), the numbers of accepted Blyth's Reed Warblers in Britain have risen dramatically. With increasing awareness of its subtle features, the acceptance rate for this species remains, perhaps surprisingly, quite high. Shetland is by far the best place to encounter a Blyth's Reed Warbler in Britain, but there are increasing records from elsewhere too. Singing males are now expected in spring, and it might not be too long before a genuine breeding attempt is reported. All of this seems incredible given the history of this once-mythical rarity, but it is one of the few good news stories in European bird populations. It has recently been removed from the list of Norwegian rarities and, although it only just creeps over our criteria threshold, with a total of 101 birds in the last ten years, we felt that this, coupled with the rapidly increasing trend, meant that removing it was the right decision. As set out in our constitution, we are happy to offer advice to any county committees who feel they need help in assessing potentially tricky species such as this.

As the Citrine Wagtail has spread across eastern Europe as a breeding species, the number of reports in Britain has increased in similar fashion, and for a while it has seemed inevitable that we should lose this species as a national rarity. And, with a total of 138 records over the last ten years and at least ten records in seven of the last ten years, it clearly meets the criteria for removal. This is another species where Shetland records predominate; elsewhere, Citrine Wagtail remains an exciting and top-drawer bird to find.

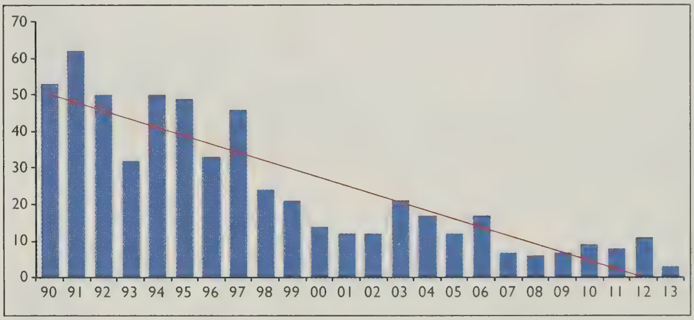

Fig. 5. Annual totals of Aquatic Warblers *Acrocephalus paludicola* in Britain since 1990.

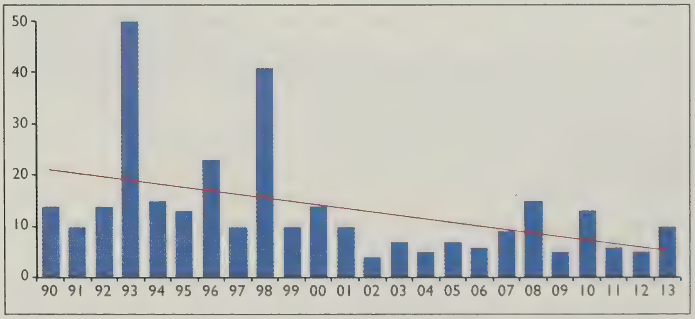

Fig. 6. Annual totals of Rustic Buntings *Emberiza rustica* in Britain since 1990.

We shall present more detail about the four species returning to the list in the BBRC report for 2015, although the latest scarce migrants reports in *BB* (White & Kehoe 2014, 2015) show the most recent data on numbers of these four in Britain. In brief, Aquatic Warbler is one of only three globally threatened birds that occur regularly in Britain. With an estimated world population of 12,100–14,700 singing males, all within Europe, this species is classified as Vulnerable by

BirdLife and numbers in Britain since 1990 have crashed (fig. 5). Given this species' conservation status, it is critically important to maintain an accurate database of its occurrences.

For Tawny Pipit, although six of the last ten years have produced ten or more records, the overall total of 95 over the last ten years is sufficient to reinstate it as a national rarity, coupled with a fairly obvious long-term downward trend, especially since the mid 1990s. Red-throated Pipit is the most contentious species treated here, since it doesn't yet quite meet our numerical criteria. Numbers in Britain hover around the ten-per-year mark, but since the record influx in 1992 it has declined here, and it is also declining on its Fennoscandian breeding grounds. Given the trend since 1990 and a possible link between that decline and climate change in both the species' tundra breeding grounds and its Sahelian wintering grounds (for example Virkkala *et al.* 2008), we felt that the best course of action was to readmit Red-throated Pipit to the BBRC list.

The westward expansion of Rustic Buntings into Scandinavia in the twentieth century was reflected by the increase in numbers reaching the UK, which peaked in the 1990s. The first documented breeding record for Norway was in 1960 (Lundberg 1962) and the population was as high as 100–500 pairs in 1994 (Gjershaug *et al.* 1994). Subsequently, it declined there by a massive 82% (Dale & Hansen 2013), and while the Norwegian population is peripheral to the main populations in Russia, it is probably symptomatic of a wider decline across the range. For example, both the Swedish (Green & Lindström 1994) and the Finnish (http://atlas3.lintuatlas.fi/results/species/rustic%20bunting) populations have declined too. In this context, the small numbers discovered in Britain in recent years are not surprising, and we had no hesitation in bringing Rustic Bunting back onto the BBRC list.

Subalpine Warblers

The position on Subalpine Warblers *Sylvia cantillans* set out recently in *BB* (*Brit. Birds* 107: 420–424) needs further slight refinement in the light of BOURC's latest taxonomic announcement (BOU 2015). The complex has now been split into Moltoni's Subalpine Warbler *S. subalpina* (monotypic) and Subalpine Warbler *S. cantillans* (now generally regarded as comprising four subspecies – *iberiae, inornata, cantillans* and *albistriata*). Of these, the first two form a subspecies pair, 'Western Subalpine Warbler', while the last two comprise another species pair, 'Eastern Subalpine Warbler'.

Moltoni's Subalpine Warbler will continue to be assessed by BBRC, but at the *species* level the newly defined Subalpine Warbler does not meet the threshold for consideration as a national rarity. However, *any* of its component subspecies (or either of the subspecies pairs) *do* meet the criteria for consideration as rare subspecies. Hence, and with effect from 1st January 2015, BBRC welcomes submissions of any of the following (claims of *S. c. inornata* are not sought at present as genetic reference material is not available):

- **'Western Subalpine Warbler' *S. c. iberiae/inornata*** – confirmed by plumage and T5 (second outermost tail feather) pattern, and supported by call.
- **'Western Subalpine Warbler' *S. c. iberiae*** – confirmed by DNA, supported by call, plumage and T5 pattern.
- **'Eastern Subalpine Warbler' *S. c. cantillans/albistriata*** – confirmed by plumage and/or T5 pattern.
- **'Eastern Subalpine Warbler' *S. c. cantillans*** – confirmed by DNA, supported by call, plumage and T5 pattern.
- **'Eastern Subalpine Warbler' *S. c. albistriata*** – confirmed by DNA and/or call and/or wing length, supported by plumage including T5 pattern.

Pre-2015 claims are also sought where the evidence allows identification against the above framework. The relevant county and local records committees will be notified of any 'not proven' claims, which will not be published in the appendices of the BBRC annual report.

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Museum Consultant Brian Small • **Summariser** Reg Thorpe

Letter

The status of Wilson's Storm-petrel in Britain

I enjoyed reading the non-passerine section of the recent scarce migrants report in *BB* (White & Kehoe 2015), but have several points to make about the account for Wilson's Storm-petrel *Oceanites oceanicus*, which states: 'There is potentially some degree of duplication of records seen from ferries and on pelagic trips in the waters around Scilly, where chumming attracts birds to boats from some distance – and so… the totals are best regarded as bird-days rather than accurate counts of individuals.' In my opinion the potential duplication is too small to warrant treating records as 'bird-days'.

During 2011–12, only one of 41 sightings was ferry-based (7th July 2012), and a similarly small percentage of records originate from ferry sightings in other years. The great majority of British records of Wilson's Storm-petrels come from short-range pelagic trips out of Scilly. I have participated in trips every year since 1995 – over 500 trips since 1999, during which I have seen about 400 Wilson's. The real issue concerning bird-days is the possible duplication of records from these trips – duplication during any trip, and between subsequent trips.

Duplication during a trip was addressed at the outset of Scilly pelagics by instituting a conservative counting method – the maximum number of birds seen together, plus any additional birds separable by plumage or other differences (Flood & Fisher 2010). This limits duplication but almost certainly leads to under-counting on 'big days'. Prior to mid July in years when juveniles occur in good numbers, we may be faced with several very similar, relatively fresh-plumaged juveniles foraging in the slick. At this time adults are moulting and it is relatively simple to distinguish individuals. The turnover of adults is not uncommon, and a similar rate of turnover of juveniles can be assumed – yet we record only the highest number of fresh juveniles seen at one time.

Duplication in consecutive trips is more difficult to deal with. Birds showing distinctive characters (such as a broken wing feather or extreme moult/wear) are looked for carefully, but it is very rare to see such birds on different trips. In fact, only one such bird was seen twice and the two sightings were on consecutive days. My experience of Wilson's Storm-petrel off Scilly is that it is very much a transient passage bird, continuously on the move, rarely foraging for long in Scillonian waters. For example, on Saturday 1st August 2009 we recorded 9+ Wilson's from a Scilly daytime pelagic (probably a significant under-count), while more were seen that evening from a shark fishing trip. We had witnessed part of a large passage of Wilson's off the southwest of England, Wales and Ireland, which included sightings in Cornwall – St Ives (2), Gwennap Head (2), Padstow (5); Pembrokeshire – Strumble Head (1); Co. Kerry – Brandon Point (14); and Co. Clare – Bridges of Ross (27) (Rare Bird Alert archive). It became known as 'Wilson's Saturday'. Remarkably, none was seen the next day from a daytime pelagic off Scilly; in fact, there was not a single report of Wilson's in Britain & Ireland until 7th August. The passage on 1st August 2009 was indeed short-lived.

The effect of the chum used covers an area of perhaps 25 km² during any trip (it is estimated that the odour reaches around 8 km – five miles – and we might drift on average about 3 km while chumming), which is a tiny fraction of the sea area in the Western Approaches – the idea that chum pulls in the same individuals from a huge area, trip after trip, is just not realistic.

The evidence suggests that sightings of Wilson's from Scilly pelagics 'perhaps involved some slight duplication of records'. Those words come from the account for Pectoral Sandpiper *Calidris melanotos* in the same scarce migrants report, where it deals with 60 birds in the Outer Hebrides in 2011. I contend that the potential for duplication in records of Wilson's Storm-petrel is no more than for those 60 Pectoral Sandpipers; and that there is no good reason why Wilson's should be recorded in bird-days.

The Wilson's account also states that the trend 1990–2012 is uncertain and the annual variability during 2000–12 is high. One of the main reasons for the uncertainty and variability in the data is the changing effort over the years: for example, the rise and demise of MV *Chalice* pelagic trips and RMV *Scillonian* III pelagic trips; and the instigation of regular pelagic trips out of Scilly in June–September since 2000, initially using two boats, reduced to one in 2008 and consequently to about 60% of the effort. In addition, the leanest years for Wilson's off Scilly generally tie in with a weather event such as a high-pressure system blocking the mid North Atlantic, while the most productive years tend to have unsettled weather and regular low depressions passing across the North Atlantic.

Acknowledgments

Many thanks to Rare Bird Alert and to Will Soar who confirmed records of Wilson's Storm-petrel in British and Irish waters for 1st August 2009.

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Editorial comment Steve White, lead author of the scarce migrants reports, commented: 'We are grateful to Bob Flood for clarifying the methods used to estimate numbers of Wilson's Storm-petrels seen off Scilly and will follow his advice in future reports.'

Notes

Clutch abandonment as a result of brood adoption in the Red Grouse

The Langholm Moor Demonstration Project is a partnership between the Game & Wildlife Conservation Trust, Scottish Natural Heritage, Buccleuch Estates, the RSPB and Natural England, and aims to reconcile grouse-moor management and raptor conservation interests. The site, in southern Scotland, straddling Dumfries & Galloway and Borders, covers approximately 30 km² of heather moorland. In 2014, nest cameras were set up to monitor the nests of radio-tagged female Red Grouse *Lagopus lagopus*, to determine the causes of nesting failures. One adult female (at least two years old) laid a clutch of eight eggs, located on 3rd May 2014 when the nest was equipped with a camera and a dummy wax egg. On 20th May, while that female was still incubating her own clutch, another brood appeared on the camera footage (plate 168). After brooding the foster chicks for a day, the female abandoned her own clutch and left the nest with the adopted brood on 21st May. Subsequently, researchers cracked open the abandoned eggs to discover that they were within a day or two of hatching. On 30th May, the female was located by radio telemetry and the chicks caught using a trained pointer dog. She had seven foster chicks, approximately 14 days old, which meant that the chicks had been about four days old when adopted.

Although there is ample evidence for both clutch or brood desertion and brood adoption/amalgamation in the grouse family (for example, Maxson 1978, Watson & Moss 2008, Dahlgren *et al.* 2010), a case where a female would abandon her own clutch to adopt another brood has not previously been reported. In this case, it might have been facilitated by the fact that the female's own eggs were close to hatching: it is known from Red Grouse, and some species of wildfowl, that females will leave the nest the day after the first eggs hatch with their brood and abandon all unhatched eggs (Steen & Gabrielsen 1986; Fortin *et al.* 2000; Elston *et al.* 2001).

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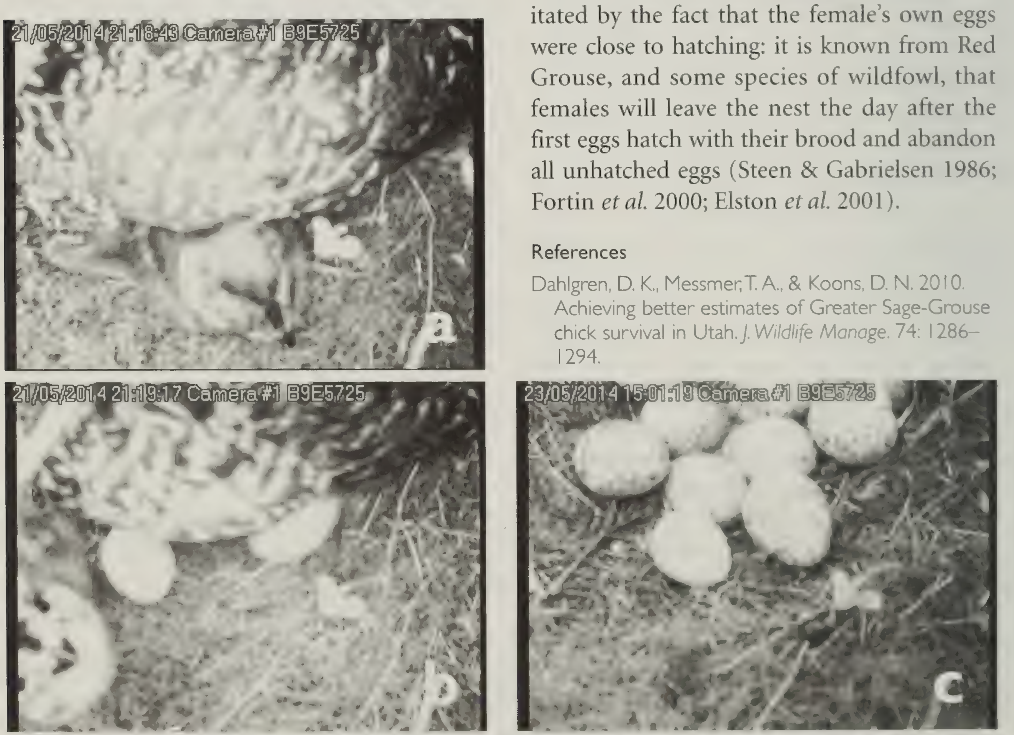
21/05/2014 21:18:43 Camera#1 B9E5725
a
21/05/2014 21:19:17 Camera#1 B9E5725
b
23/05/2014 15:01:19 Camera#1 B9E5725
c

168. Nest-cam images from Langholm, in May 2014, showing (a) an adopted Red Grouse *Lagopus lagopus* chick being brooded by the female; (b) an adopted chick alongside the incubating female, with unhatched eggs clearly visible; and (c) the abandoned clutch, once the female has departed the nest with the adopted brood (the smaller white egg in the foreground is the dummy egg).

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Great Cormorant killing and attempting to eat Common Pochard duckling

On 3rd August 2014, at Hanningfield reservoir in Essex, a Great Cormorant *Phalacrocorax carbo* was seen to catch and eventually kill a Common Pochard *Aythya ferina* duckling.

The Cormorant managed to flip the duckling over onto its back so that it had considerable difficulty in keeping its head above water. For some 10–15 minutes the Cormorant continued to peck at the duckling, which was approximately three weeks old. It also occasionally seized it by the neck and apparently forced its head under water. A female Pochard, presumably the mother, at first attempted to drive the Cormorant off by flying at it, but then remained nearby, watching the events unfold. When the duckling, still on its back, ceased to move its feet and was presumably dead, the Cormorant attempted to swallow the carcase head first. It had extreme difficulty ingesting even the bill, but persisted for a further 5–10 minutes, frequently pecking at the body in the water before picking it up once more and trying to swallow it. The female Pochard flew off at this point.

Eventually six more Cormorants arrived, but did not seem actively interested. A Great Black-backed Gull *Larus marinus* then arrived and contested possession of the corpse. The gull was later seen feeding on the duckling on the shoreline, the Cormorants having disappeared.

I have never before seen a Cormorant tackle prey other than fish. *BWP* states 'Occasionally birds recorded: waterfowl and Moorhen *Gallinula chloropus* (St John 1882), ducklings of Shelduck *Tadorna tadorna* (van Dobben 1952)', but makes no mention of Common Pochard or similar species among its prey. Cook & Cooper (2004) found remains of domestic chicken and a goose *Branta*/*Anser* among stomach remains.

Reference

Cook, A., & Cooper, J. 2004. Avian remains in the stomach of Great Cormorant. *Brit. Birds* 97: 472–473.

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Wood Pigeon eating *Eucalyptus* leaves

On 13th September 2014, in my garden in West Bagborough, Somerset, I saw a Wood Pigeon *Columba palumbus* perched on a branch of a Cider Gum *Eucalyptus gunnii* tree, tugging at nearby leaves. On closer inspection I saw that many of the leaves were swallowed after being picked – at least six were consumed before the bird flew off.

It is well known that Wood Pigeons commonly eat the green leaves of many plants, but *Eucalyptus* was not included in the list given in *BWP*. Perhaps it was the aromatic nature of the leaves that attracted the pigeon on this occasion, since evergreen leaves are not usually selected. At the time, several species of deciduous trees were still in full leaf, as well as many leafy ground plants, so alternative food was readily available.

A. P. Radford, Crossways Cottage, West Bagborough, Somerset TA4 3EG

Adult breeding Jackdaws with broken primary tips

In the months of May and June, in 2013 and 2014, I caught and ringed 28 adult Jackdaws *Corvus monedula*, all apparently in breeding condition, in my garden in Cheshire. Twelve of these birds (six males and six females) had the tips broken off their longest primary feathers. Some of the most extreme examples had several centimetres missing from each of the outermost four or five primaries (plate 169).

The feather tips were presumably broken by abrasion when breeding birds turn round in a tight nest site, perhaps especially in a stone or brick cavity, such as a chimney or in a church spire, or a natural site in a cliff face (all commonly recorded nest sites in Cheshire; Norman 2008). This must be an occupational hazard for any species visiting such holes and surely cannot be a new phenomenon, especially since many of the nest sites have been used for many years. I cannot imagine that there has been any change in the abrasiveness of the nest holes or the quality of Jackdaws' feathers, but I have searched the literature and birds with broken primaries appear not to have been reported before. Perhaps the occurrence varies locally and might be more common in areas with relatively abrasive rocks and building materials such as Cheshire sandstone. I had not noticed it until I started catching adult Jackdaws in 2013, but realised that, with practice, birds with broken primary feathers can even be identified in flight.

Reference

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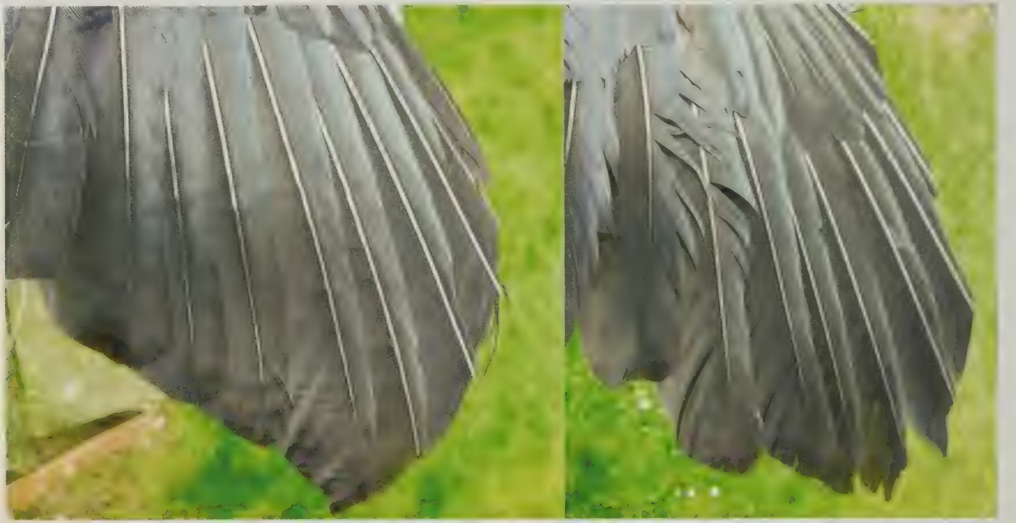

David Norman

169. Examples of adult Jackdaws *Corvus monedula* with broken primary feather tips, Cheshire, June 2014.

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Rook attempting to catch Skylark

At about 13.00 hrs on 20th October 2014, I saw a flock of 15 Rooks *Corvus frugilegus* in direct flight, at an altitude of about 50 m, over fields near my home in Somerset. Suddenly, one of the Rooks veered off from the flock and began to chase a nearby Skylark *Alauda arvensis*. The Skylark was soon seized by the Rook, although it quickly struggled free and flew off strongly, whereupon the Rook rejoined the flock. In his monograph on the Skylark, Donald (2004) did not mention the Rook as a potential predator.

Reference

Donald, P. F. 2004. *The Skylark*. Poyser, London.

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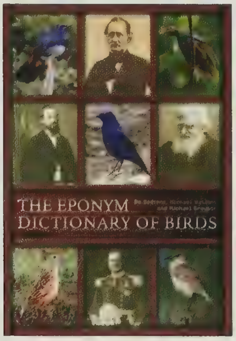
Reviews

The Eponym Dictionary of Birds

By Bo Beolens, Michael Watkins and Michael Grayson
Bloomsbury, 2014
Hbk, 624pp
ISBN print 978-1-4729-0573-4, ePub 978-1-4729-0574-1, **£50.00**



This is the fourth in a series of eponym dictionaries that these authors have produced since 2009, the previous three covering mammals, reptiles and amphibians. Bo Beolens and Michael Watkins were also the authors of the excellent *Whose Bird?* (*Brit. Birds* 97: 151), so initially I wondered why a further volume was necessary. The answer is perfectly simple: the first book looked only at vernacular names whereas this one goes much further and takes in scientific names too. The result is a fourfold increase in both personalities and taxa. The figures are actually quite staggering: over 4,100 entries covering more than 10,000 genera, species and subspecies.

We have, then, a major work of reference, a book to be browsed through and delved into and at the same time a source of all sorts of new information and, incidentally, much pleasure. They are all here, not just the ornithologists and the collectors, but also the doughty explorers, the wealthy amateurs, the assorted servants of Empire, the soldiers and the sailors, the long-suffering wives, the inquisitive clergymen, the backers and sponsors, and all the rest. Of necessity, the biographies are mostly brief, and in the case of many largely unrecorded individuals this may amount to only a few lines. I think the authors may be forgiven for rambling on a bit about such an extraordinary character as Charles Waterton, while allowing much less space to well-known historical figures like Napoleon or Queen Victoria. Remarkably, only 17 eponyms have completely defied their investigations and remain just names.

I have learnt a lot from this book. I was not aware, for instance, that in looking up 'Wilson' I would be presented with ten different people, or in the case of 'Ross', to consult seven entries. To my surprise I also found that I know or have known or met at least 15 of the characters in this book, including three whose appearance here was unexpected – I had no idea birds had been named for them – there is even one with whom I have played cricket!

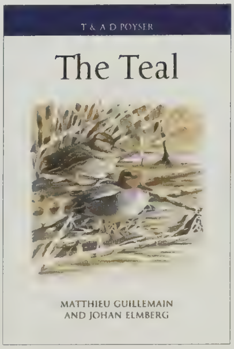
My immediate thought is that I should recommend this book, despite its rather high cost. There is, however, an issue regarding accuracy, which is crucially important in a work such as this. For example, two sets of dates are given for the sixth Earl of Dartmouth, the second of which would have had him living for 136 years. If the dates are to be believed, then the ninth Earl of Dalhousie served under Wellington in the Peninsular War and at Waterloo before he was actually born. These might be down to carelessness, slipshod proofreading or lazy editing, or a combination of all three. Rather more worrying was the entry under 'Farquhar' where, if the authors had selected the correct Admiral of that name, it should have been obvious that a man born in 1855 would not be in command of one of Her Majesty's Ships in 1870, as the entry states! The Farquhar who fits their dates actually first commanded a warship in 1893: ironically, it was the sloop HMS *Buzzard*!

Despite my general enthusiasm for this book, errors of this kind rather dented my confidence in it.

Mike Everett

The Teal

By Matthieu Guillemain and Johan Elmberg
Poyser, 2014
Hbk, 320pp; colour and monochrome photos, line-drawings, many charts
ISBN 978-1-4729-0850-6, **£50.00**



Looking back across my collection of Poyser monographs shows that some authors have approached their subject from lifelong personal field observation, while others have created a very thorough shakedown of research carried out by many people. This book is in the latter camp. That comment is not intended as a snub: Matthieu Guillemain is a Research Fellow at Tour du Valat, in the Camargue in France, while Johan Elmberg is Professor of Animal Ecology at Kristianstad University in Sweden, and there are perhaps few people who have their level of experience in assessing the population and ecology of waterfowl. The approach that they take is therefore primarily academic as they summarise all that is known about 'the Teal'.

Despite the book's title, it is in fact about two taxa: the Eurasian Teal *Anas crecca* and the North American Green-winged Teal *A. carolinensis*, here treated as races of a single species, the Common Teal (a position also adopted by the American Ornithologists' Union and the *Howard & Moore* checklist). However, most European records panels now split the Common Teal, as do the *IOC* and *Clements* checklists. What becomes clear as you read the text is that, apart from fairly minor plumage and size differences, these two forms appear to share identical lifestyles. Indeed, the authors summarise recent evidence presented by Jeffrey Peters and others who claim that gene flow between the two forms continues, thus preventing them becoming separate species.

The book covers all the key areas that you would expect – distribution, population trends, foraging ecology, breeding behaviour and population dynamics. Throughout their range they are a major target for hunters, and sections discuss management and conservation too. Although these are common species, I was struck by the challenges faced in their relatively short lives, on both the breeding and the wintering grounds. Living in the UK, it is easy to think of them as resident, but our situation is unusual because throughout much of their range they are primarily or completely migratory. This is particularly the case for North American birds as they are able to travel much farther south than their Eurasian counterparts, which are restricted by habitat limitations in Europe, North Africa and Asia.

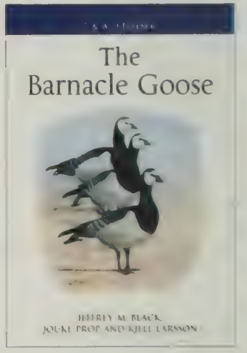
Although Poyser monographs are always highly factual, some authors have weaved their facts into a very readable text. This book is somewhat clinical in comparison, and given the background of the two authors that is what you might expect. Each chapter is full of facts about wildfowl ecology, showing how the Teals compare with others within the family. In fact, this book provides a wealth of information about wildfowl in general, and at times I felt that this rather overshadowed the data on the Eurasian and Green-winged Teals themselves.

A series of appendices covering almost 100 pages provides a great level of detail on population numbers by country, key wintering sites and a detailed list of food items (the latter covering 23 pages!). There is also a summary table of 42 Avian Influenza Virus strains that have been found in either species, plus a long list of parasites and ectoparasites that they play host to. The book concludes with a bibliography of around 800 papers and publications.

Keith Betton

The Barnacle Goose

By Jeffrey M. Black, Jouke Prop and Kjell Larsson
Poyser, 2014
Hbk, 287pp; colour and b&w photographs, tables, figures and line-drawings
ISBN 978-1-4729-1157-5, £50.00



When is a monograph not a monograph? When it is a book with the title of a single species from a publisher well known to produce fine single-species monographs, but who, on this occasion, has brought out two-fifths of a monograph!

The three authors, all experts on the species, have written about just two of the five populations, the one breeding in Svalbard and wintering on the Solway Firth (Scotland/England), and the other breeding on islands in the Baltic and wintering on the North Sea coasts of Germany and the Netherlands. If you want to learn in great detail about these two populations, then this is an excellent and comprehensive account, not just dealing with the conventional topics of numbers and population dynamics but also giving in-depth treatment to behavioural topics on an individual and flock basis, including finding mates for long-term partnerships, the use of food resources, site fidelity in summer, on migration and in winter, and indeed everything that makes a Barnacle Goose tick. However, if you also want to learn about the other three populations – (1) breeding in Arctic Russia and wintering in the same areas as the Baltic population, (2) the newest population, which actually breeds within this same wintering range, and (3) breeding in East Greenland and wintering on the western coasts of Scotland and Ireland – then you will find that they are virtually ignored, apart from brief mentions in the text and the occasional map or figure.

Having spent much time with the first author, on the Solway and in Svalbard, and having known the second author for many years, including in Svalbard, I have no hesitation in heartily commending this account of the Svalbard–Solway population. The third author has equal familiarity with the Baltic-breeding population, as a glance at the bibliography reveals.

The Svalbard–Solway population has been studied intensively by the Wildfowl and Wetlands Trust (for whom Jeff Black worked) and Groningen University (the erstwhile home of Jouke Prop) since the early 1970s (when there were just over 3,000 birds) right up to the present (population now over 30,000). Birds were marked from the outset with individually identifiable plastic rings, which, together with the more recent use of satellite transmitters, have enabled the amassing of an enormous amount of useful data. Barnacle Geese, in common with other geese, pair for life (with rare exceptions), and the goslings stay with their parents into the following winter. This family cohesion plays an important role in determining gosling survival, the ability to find food (larger families are dominant over smaller ones or pairs), and indeed on the whole population structure, as revealed in successive chapters here.

The Baltic-breeding population came into being in 1971 when a single pair bred on an island off the Swedish island of Gotland. Believed to involve birds from the Russian-breeding population perhaps unable to migrate to their breeding grounds, it was completely unexpected when more and more birds followed suit, leading to 630 pairs by 1986 and 2,450 pairs in 2001, with the current population at least 40,000 birds. Although, after about 15 years, density-dependent processes limit breeding numbers in each colony, new colonies are still being formed, leading to continued expansion both of the range and of the overall population.

The great bulk of the chapters on behaviour and related topics are based on the Svalbard–Solway population, but the Baltic-breeding population provides fascinating comparisons on such topics as body size and its effects on reproduction: larger females produce larger eggs and clutches, and more and heavier young than smaller females. However, while larger birds in the Svalbard–Solway population live longer and breed more successfully than smaller birds, this is not true for the Baltic-breeding population, though no explanation is offered.

Other comparisons between the two populations are highlighted and discussed in terms of the effect they have on the birds as individuals as well as on total numbers, including the obvious differences in the length of the migrations (3,100 km from the Solway to Svalbard, 750 km from Germany/Netherlands to Gotland) and the length and type of the summer seasons (Arctic versus temperate).

I found this book an eminently satisfying read, covering ground I have long been aware of, as well as introducing me to much that was new. However, much as I enjoyed this book, I can't but help express some disappointment that the word 'Islay' doesn't appear in the index! While I am well aware that little is known about this population on its breeding grounds, it has been quite well studied on this island and, to give just one example, the conflict between Barnacle Geese and agriculture on Islay, including the long-running Islay Goose Management Scheme, would I feel have made a valuable comparative addition to the concluding chapter on conservation and agriculture.

Malcolm Ogilvie

The Merlin

By Richard Sale
Snowfinch Publishing, 2015
Hbk, 304pp; numerous colour photos
ISBN 978-0-9571732-1-7, **£40.00**

It's somewhat surprising that it has taken until 2015 for the first comprehensive book on the Merlin *Falco columbarius* to be published. I was also a little surprised this one has been published independently by the author rather than slotting neatly into an established series. It fits snugly enough on the shelf alongside my 'Poysers' and if the vivid green jacket is not to everyone's taste, at least the book will always be easy to find. Jacket aside, it is very much in the Poyser mould and covers all the key areas you would expect to see in a volume from that series.

The book is well structured and organised, though the writing style is rather formal and 'scientific' in places. It is not the lightest of reads but the pages are packed with information and good use is made of tables and figures to help illustrate key points. About 30 text boxes highlight issues of particular interest without interrupting the flow of the main text. The design and layout is perhaps not quite as slick as would be expected from more established publishers, though the book does make excellent use of colour photographs. It includes a comprehensive collection of mostly high-quality images, placed within the text where they are most relevant, adding greatly to the overall feel and quality of the book.

In contrast to many monographs there is no obvious bias here towards one part of the world. Published studies concerning Merlins from across their vast range in North America, northern Europe and Russia have been utilised to provide a comprehensive global overview, including full discussion of all the different subspecies. I found the information on urban birds in North America particularly interesting. One study showed that urban birds took mostly House Sparrows *Passer domesticus* in the breeding season, while a mixture of House Sparrows and Waxwings *Bombycilla garrulus* dominated the diet in winter. Surprisingly, a small rodent was the third most important food in winter for these birds. It seems that many birds of prey are capable of adapting to urban situations, though they may do so only in restricted parts of their range. I wonder if Merlins will ever make that transition here in Britain?

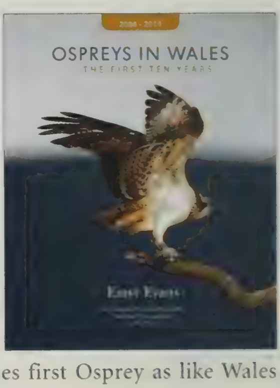
The final chapter focuses on Merlin populations. Based on the information available it seems that the global picture is not too bad. Numbers appear to be stable or increasing in most areas, though the author is quick to point out that a species breeding at low densities across huge areas of remote terrain is not the easiest to survey effectively and many knowledge gaps remain. In Britain, recent fortunes are mixed, with declines in parts of the range, most notably in northern England, only partly offset by increases in Wales. As if to emphasise the difficulties in gaining a full understanding of this bird, even in Britain where it is reasonably well-studied, there is considerable uncertainty as to why numbers in some areas have fallen. Climate change, management associated with grouse moors and declining prey populations, both in the breeding season and in winter, are all suggested as possible contributory factors.

This is an enjoyable and useful book. In a group of birds disproportionately well served by writers and publishers it plugs a surprisingly large gap in the market and deserves to be widely read.

Ian Carter

Ospreys in Wales

By Emyr Evans
Published by the author, 2014
Hbk, 248 pages; many colour photographs
ISBN 978-0-9930990-0-7, £30.00



The remarkable story of the return of Ospreys to breed in Wales has been brought together in this large-format book, beautifully illustrated with some superb photography. The author has been intimately involved with this epic story – one of joy and sadness, of ecstasy and despair, but ultimately of endurance, persistence and hope.

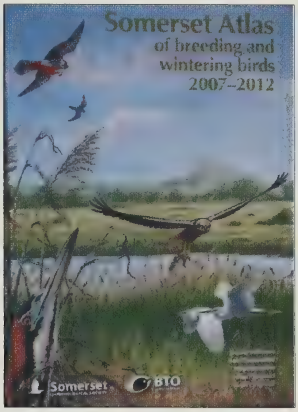
Although Ospreys must have passed through Wales on migration in centuries past, surprisingly there are no historical records of nesting, save for a reference from 1604 to 'fishey hawkes' breeding along the banks of the Dyfi. The Mabinogian tale of 'The Eagle of Gwernabwy' probably refers to an Osprey. The coat of arms of Swansea granted in 1316 features an Osprey, while there are at least ten names in Welsh that refer to Ospreys. Neither must one forget The Ospreys – *Y Gweilch* – one of the four professional rugby union teams from Wales. Indeed, Iolo Williams in his foreword describes seeing ones first Osprey as like Wales winning a rugby Grand Slam.

Having first nested in Wales in 2004, now there are at least two pairs of Ospreys nesting in both Meirionnydd and Montgomery. Increasing numbers pass through elsewhere on migration, sometimes even linger a while, so surely it cannot be too long before other Welsh counties are colonised.

David Saunders

Somerset Atlas of breeding and wintering birds 2007–2012

By David Ballance, Rob Grimmond, Stephen Moss,
Julian Thomas and Eve Tigwell
Somerset Ornithological Society, 2014
Hbk, 336pp; photographs, maps and tables
ISBN 978-0-9931205-0-3, **£35.00**



Another county to complete its own bird atlas on the back of the national BTO/BirdWatch Ireland/SOC project is Somerset. This one is an attractive and well-presented hardback in a compact size – the same size as *BB* – so it is comfortable to read. The book has been published by the local bird club (Somerset Ornithological Society), and also carries the BTO logo on the cover.

Somerset is a varied county with the uplands of Exmoor and other hills in the west and southwest where it borders Devon, and the Mendips in the northeast along the Avon border. It has a long, north-facing coastline (about 70 km) along the Bristol Channel and, of course, the extensive marshes of the Somerset Levels, fast becoming one of the prime marshland areas for birds in Britain. The cover depicts the marshes (with Eurasian Bittern *Botaurus stellaris*, Little Egret *Egretta garzetta*, Marsh Harrier *Circus aeruginosus* and Hobby *Falco subbuteo*) on the front and an oak wood and moorland scene on the back (with Common Buzzard *Buteo buteo*, Wood Warbler *Phylloscopus sibilatrix*, Pied Flycatcher *Ficedula hypoleuca* and Common Redstart *Phoenicurus phoenicurus*).

Inside there are 36 pages of introduction before the main species accounts. A major section in this introduction is a guide to the county and its birds. With 14 colour photographs and three maps (showing topography, hydrology and human geography) this is an excellent chapter, guiding the reader through the different habitats and bird communities of the county. Picking out example species of each area helps readers less familiar with Somerset to feel closer to the ornithology of the county and I suspect many local readers will learn much from this section too.

The project to map the birds of the county ran in tandem with that of the nationwide Atlas for four years, with an additional winter and breeding season at the end. The area covered was the current county and bird recording area of Somerset, for which there are 973 tetrads. All of these were surveyed, except for 26 on the border with neighbouring counties and where the land within Somerset occupies less than a quarter of the land area.

The maps are simple, with no depiction of altitudes or physical features. The breeding-season maps use different coloured red-toned circles representing levels of breeding evidence by tetrad, and a '+' to denote presence in the breeding season where there was no further evidence. Presence in winter is denoted by a blue circle, but there is no differentiation to show the numbers of birds recorded. The county is conveniently shaped so that two maps can be shown on one page and these all appear on the right-hand side of the opened book. Because this is the first atlas for Somerset, there are no change maps. The text can therefore concentrate on describing local distribution at a tetrad level, which is done to a varying extent, but with nothing on the map to relate distribution to physical features, the reader is left to decipher much of the distribution by reference to the introductory chapters. Some of the texts are very brief, with quite a lot of white space or space taken up with black-and-white illustrations of some species. These vignettes give a nice feel to the book but I would like to have had more to read so that I could better understand the local habitat associations behind the distributions. So, for Common Whitethroat *Sylvia communis*, the different levels of tetrad occupation across the county are remarked upon, but is there any common factor which might explain the gaps in the lowlands? Why are there fewer tetrads occupied by Stock Doves *Columba oenas* in the north of Somerset? The map for Yellowhammer *Emberiza citrinella* is one of the more striking and the absence from urban areas, Exmoor and the Levels is explained. Is there some underlying link between the occupied areas with land use and altitude, as has been demonstrated elsewhere? Again, what about the gaps?

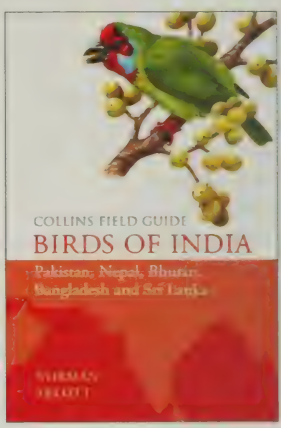
Somerset has an avifauna, *Birds of Somerset*, but there will have been many changes since its publication in 1988. With the benefit of the new distribution maps, perhaps more could have been said to update that work. There are no statistics in this atlas to indicate the number of occupied tetrads by species, an easy yardstick by which future comparisons could be made. And, despite the hard work of fieldworkers counting all birds as part of the Timed Tetrad Visits, there seems not to have been any use of this information in giving measures of abundance across the county or maximum totals recorded.

All in all, the authors should be proud that they have produced a book showing the distributions of all species in the county, by which future changes can be compared. I feel, however, that an opportunity to bring the maps to life has not altogether been achieved. I would certainly recommend this book to anyone who knows Somerset, but other county groups writing bird atlases will learn little from it.

Mark Holling

Birds of India

By Norman Arlott
Collins, 2015
Hbk, 400pp; numerous colour illustrations and distribution maps
ISBN 978-0-00-742955-4, **£29.99**



This is the fourth volume in the 'Collins Field Guide' series that Norman Arlott has written and illustrated; his previous volumes covered the Palearctic, West Indies and North America. *Birds of India* follows the same format, with 165 double-page spreads with illustrations facing the accompanying text. The plates illustrate all the species and many distinctive races that occur in the Indian subcontinent along with some vagrants to the region, which extends from Pakistan in the west, south to Sri Lanka and east to Bangladesh. Just a single, profile image for each species (all facing left) is included except where the sexes differ; these are then illustrated by either an entire bird (e.g. some of the chats) or just the head (e.g. the woodpeckers). Thumbnail-size distribution maps for each species (except vagrants, seabirds and introduced species) are bunched together at the back of the book. The species sequence and English names have a comfortable feel that many (older?) readers will be familiar with. Although this book is not state of the art, no field guide ever can be in today's rapidly changing scene where taxonomic discoveries and species sequence realignments appear almost weekly.

This neat and compact volume is a later-comer to what is increasingly seen as a saturated market for bird guides, and it isn't yet clear whether this book fills a niche that the others haven't already occupied. Its size (210 mm × 130 mm) and weight certainly make it suitable for slipping into a pocket, and being a hardback it should last longer than some of its softback competitors. The text is minimal and lightweight, typically between five and eight lines per species, and focuses on behaviour, voice, habitat and distribution/status. Identification relies entirely on the illustrations, supplemented by the occasional text comment for plumages that aren't illustrated.

The illustrations are generally accurate but not to scale – compare the sizes of the Little *Sternula albifrons*, Sandwich *Sterna sandvicensis* and River Terns *Sterna aurantia* on plate 49. Throughout, the colours are rather on the dark side and too saturated – in particular the orange tones have become almost red. But if you can work around this, then you have a handy guide that should not let you down when you need it. At £30 it is cheaper than its competitors that cover the same territories, although you will still need a more authoritative volume to refer to after a challenging day's birding. As there are several good guides to this region, I think that the choice to buy has to be a personal one – do you feel more comfortable with Norman Arlott's artwork over that of John Anderton (*Birds of South Asia: The Ripley Guide*) or those artists who illustrated the *Birds of the Indian Subcontinent* and its numerous spin-offs? Is this the volume that you want to carry with you in the field? I have no reservations here and look forward to field testing it on my next visit.

Peter Kennerley

Recent reports

Compiled by Barry Nightingale and Harry Hussey

This summary of unchecked reports covers early March to early April 2015.

Headlines Of the early arrivals in a strong southerly airstream, the rarest was a Crag Martin on the Isle of Wight, while the supporting cast included a Desert Wheatear on Scilly and an American Herring Gull in Cornwall (another of the last species was seen in Co. Cork). A Black-winged Stilt was found in Dorset, while expected early arrivals included two Alpine Swifts, in West Midlands and Sussex, half a dozen or more Night Herons on Scilly, a Red-rumped Swallow in Co. Cork and a Woodchat Shrike in Cornwall. Significant arrivals of Hoopoes and Ring Ouzels materialised at the end of the period. Farther north, there was the now expected passage of White-billed Divers, particularly off North-east Scotland.

Ross's Goose *Anser rossii* Tullibody (Fife), 11th–24th March. **Canada Goose** *Branta canadensis* Small race, North Slob (Co. Wexford), long-stayer to 20th March; three, Roonagh Lough (Co. Mayo), 16th March. **Cackling Goose** *Branta hutchinsii* Long-stayers in the Cults Loch area (Dumfries & Galloway), to 25th March, and Islay (Argyll), to 13th March. **American Wigeon** *Anas americana* Long-stayers in Ayrshire, Co. Leitrim, Nottinghamshire and Yorkshire; new arrivals in Devon, Orkney, the Outer Hebrides and Shetland. **Black Duck** *Anas rubripes* Tresco (Scilly), long-stayer to 8th April. **Blue-winged Teal** *Anas discors* The Shunan (Orkney), long-stayer to 27th March. **Ferruginous Duck** *Aythya nyroca* Lakenheath Fen (Suffolk), 21st–22nd March. **Lesser Scaup** *Aythya affinis* Long-stayers Martnaham Loch (Ayrshire), Lough Pharisee (Co. Cavan), Cosmeston Lakes (Cornwall), Cardiff Bay Wetlands (East Glamorgan); and Lough Gara (Co. Sligo); also Castleplunket (Co. Roscommon), 30th March; Trimley Marshes (Suffolk), 7th April. **King Eider** *Somateria spectabilis* Long-stayers Maenporth (Cornwall), to 17th March and Ruddon's Point (Fife), to 7th April; also Burghead (Moray & Nairn), 4th April; Ythan Estuary (North-east Scotland), 5th–6th April. **Harlequin Duck** *Histrionicus histrionicus* Long-stayers Brora (Highland), to 8th April; River Don (North-east Scotland), to 9th April. **Black Scoter** *Melanitta americana* Long-stayers Rossbeigh (Co. Kerry), to 3rd April, and Cheswick Sands (Northumberland), again 26th March. **Surf Scoter** *Melanitta perspicillata* Long-stayers Denbighshire (up to four), Lothian, Suffolk and Co. Wexford; also Cheshire & Wirral (up to seven), Co. Louth, Co. Meath, Orkney (two), Shetland and Staffordshire.

Pacific Diver *Gavia pacifica* Mount's Bay (Cornwall), long-stayer to 15th March. **Great Northern Diver** *Gavia immer* Large count at Rerwick (Orkney), 349 on 10th March. **White-billed Diver** *Gavia adamsii* Portsoy (North-east Scotland): in March, one on 13th, three 18th–19th and six 21st–27th; then in April, three on 3rd, ten on 4th (from a boat), 12 on 6th and at least two 8th–9th. Elsewhere, seen in Moray & Nairn, Orkney (up to two), the Outer Hebrides (two or three) and Shetland (two).

Night Heron *Nycticorax nycticorax* On Scilly, a total of between six and nine were seen: St Mary's, at least three (but perhaps up to six), 2nd–6th April, one remaining to 7th April; St Agnes, one on 3rd and 9th; Tresco, three, 5th April; Bryher, one found dead, 9th April. **Cattle Egret** *Bubulcus ibis* Two long-stayers at Dungeness (Kent), to 9th April (with up to seven Great White Egrets *Ardea alba*); another Hamstreet area (Kent), to 24th March. **Glossy Ibis** *Plegadis falcinellus* records from Cambridgeshire, Essex, Nottinghamshire and Co. Waterford.

Black Kite *Milvus migrans* Eastry and Bough Beech Resr (both Kent), 23rd March; Hayle (Cornwall), 8th April. **White-tailed Eagle** *Haliaeetus albicilla* A wide-ranging individual was seen in Essex 13th–15th March, then at various sites in Suffolk and Norfolk 15th–23rd March; one ringed on Mull (Highland) in June 2014 was seen at various sites in Co. Durham from 24th March to 4th April.

Andy Jordan

170. Penduline Tit *Remiz pendulinus*, Darts Farm, Devon, April 2014.

American Coot *Fulica americana* North Uist, long-stayer to 3rd April. **Black-winged Stilt** *Himantopus himantopus* Abbotsbury (Dorset), 3rd–10th April. **Lesser Yellowlegs** *Tringa flavipes* Long-stayers Rogerstown (Co. Dublin), to 7th April, and Rye Harbour (Sussex), to 11th March.

Forster's Tern *Sterna forsteri* Claddagh (Co. Galway), long-stayer to 19th March. **Bonaparte's Gull** *Chroicocephalus philadelphia* Long-stayers Ballycotton (Co. Cork), to 8th April, Dawlish Warren (Devon), to 22nd March, Cardiff Bay – two there 24th–28th March, then one to 9th April and Radipole Lake (Dorset), to 7th April. New birds at Tramore (Co. Waterford), 15th March to 7th April; Tiree, 24th March; Loch Caolisport, 26th–27th March, then Ormsary (all Argyll), 7th April. **Laughing Gull** *Larus atricilla* New Brighton (Cheshire & Wirral), long-stayer to 9th April, also at Seaforth (Lancashire & N Merseyside), 5th–9th April. **American Herring Gull** *Larus smithsonianus* Black Ball Harbour (Co. Cork), 15th March; Drift Resr, 16th March and 6th April, presumably same near St Just (both Cornwall), 20th–24th March and 3rd and 9th April.

Alpine Swift *Apus melba* Wolverhampton (West Midlands), 9th March; Crawley (Sussex), 28th–30th March. **Hoopoe** *Upupa epops* An influx in early April, with multiple sightings including four at Mizen Head (Co. Cork) on 9th, four on St Mary's (Scilly), and two on Skomer (Pembrokeshire), at Kilmurrin (Co. Waterford), and Carnsore Point (Co. Wexford). **Gyr Falcon** *Falco rusticolus* Inishbofin (Co. Galway), long-stayer to 7th April.

Woodchat Shrike *Lanius senator* Porthgwarra (Cornwall), 31st March. **Penduline Tit** *Remiz pendulinus* Darts Farm/Topsham, two to 4th April, then Seaton Marshes (all Devon), 5th April. **Crag Martin** *Ptyonoprogne rupestris* Bonchurch (Isle of Wight), 7th April. **Red-rumped Swallow** *Cecropis daurica* Mizen Head (Co. Cork), 9th April. **Willow Warbler** *Phylloscopus trochilus* Portland (Dorset), 400 on 7th April; Bardsey (Caernarfonshire), 300 on 8th April. **'Black-bellied Dipper'** *Cinclus c. cinclus* Long-stayers Voe (Shetland), to 13th March, and Harpham (Yorkshire), to 25th March. **Ring Ouzel** *Turdus torquatus* Strong arrival in early April including 18 at Portland on 8th, 20 at Great Orme's Head (Denbighshire) and 27 at Ivinghoe Beacon (Buckinghamshire), both on 10th. **Desert Wheatear** *Oenanthe deserti* St Agnes, 21st–26th March. **Two-barred Crossbill** *Loxia leucoptera* Forest of Dean (Gloucestershire), 21st and 25th March. **Little Bunting** *Emberiza pusilla* Long-stayers remained in Cornwall and East Glamorgan, with others in Cornwall and Dorset.

Bob Flood

171. Male Desert Wheatear *Oenanthe deserti*, St Agnes, Scilly, March 2014.

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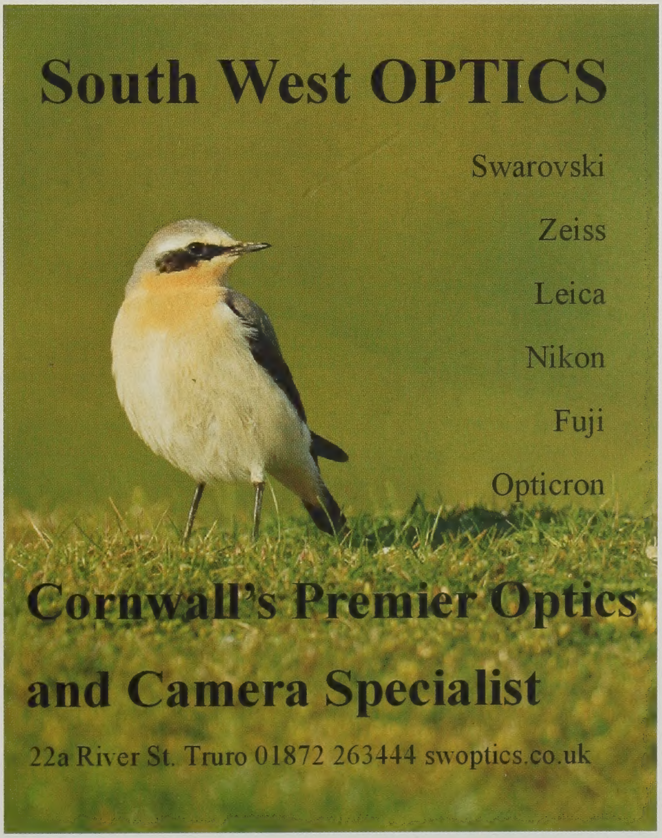

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